EFFECTS OF FINANCIAL PRESSURES ON SPECIAL EDUCATION SPENDING: HOW FISCAL SENSITIVITY INFLUENCES SERVICE EXPENDITURE

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Submitted to the Faculty of the
Graduate College of the
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in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
July, 2007

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CHAPTER I

INTRODUCTION

Controversy over appropriate accommodation to student disability existed when the laws governing such were first enacted (See Kurlioff, 1975). Underpinning service-provision confusion and inherent dilemmas are the fiscal realities of providing these accommodations in relation to historic under-funding of special education (Council for Exceptional Children [CEC], 2004). Historically, authorities and stakeholders believe that many special education students do not receive the services they need in order to benefit from their educational opportunities (National Council on Disabilities [NCD], 2000). Stakeholders predominantly base this perception on intuition and opinion, government monitoring reports, and court decisions. This investigation considers the role of fiscal contingency in the decision-making processes that determine appropriate services for students who have disabilities.

Lack of Services

Intuition and Opinion

In 2000, popular press summed-up the NCD's *Back to School on Civil Rights* with Gullo's (2000) Associated Press headline and byline, "Study: States Ignore Special Ed

Law . . . Many children with disabilities are getting substandard schooling because *states* are not complying with federal rules on *special* education, an independent agency reports [bold italics retained]" (n. p.). A statement such as this may serve to initiate, and possibly even represent, public concern about special education service-provision. This perspective is supported by the following excerpt from the NCD report, "They [special education teachers] must function within an educational system that lacks adequate commitment, expertise or funding to deliver appropriate services to every child who needs them" (p.14). Further evidence of these struggles is again found in government forums with the February, 2001 congressional hearing entitled, *Special Education: Is IDEA Being Implemented as Congress Intended?,* reviewed by Rangel-Diaz (2001). Rangel-Diaz, representing the Center for Education Advocacy in Miami, Florida, shared her impressions and observations. She stated that Congressman Dan Burton, Chairman of the House of Representatives Committee on Government Reform, opened the hearing with, "Why is it that, when we have federal law that requires that every child receive a free and appropriate education, many families are having to go to court to receive those services?" (n. p.) During the hearing, Congressman Burton shared his personal experience, recounted by Rangel-Diaz, “He related the struggles of his daughter in obtaining educational services for his grandson. He has attended IEPs [Individual Education Plan] meetings with his daughter and was shocked to find the recalcitrant system that we have all grown so accustomed to. He stated that if this happens to a child who has a Congressman for a grandfather, he could not even begin to imagine what is happening to other families and other children. His experience with the special education system is what motivated him to investigate the implementation and enforcement of

IDEA [Individuals with Disabilities Education Act of 1997]" (n.p., brackets added). Arguably, bias of many types may fuel the dramatic presentations provided above. However, these descriptions paint a drastically different picture than one of public schools' enduring commitment toward appropriate education for students who have disabilities.

Monitoring Reports

Passages in two government-sponsored reports have clearly evidenced lack of services to students who have disabilities. The *Back to School on Civil Rights* Executive Summary stated, "Every state was out of compliance with IDEA requirements to some degree; in the sampling of states studied, noncompliance persisted over many years... Notwithstanding federal monitoring reports documenting widespread noncompliance, enforcement of the law is the burden of parents who too often must invoke formal complaint procedures and due process hearings, including expensive and time-consuming litigation, to obtain appropriate services and supports to which their children are entitled under the law" (NCD, 2000, p. 11). After revisions to existing special education laws in 1999, the United States Department of Education (USDOE) initiated the Continuous Improvement Monitoring Process (CIMP). In 2002, the *Twenty-fourth Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* noted, "These modifications [to monitoring procedures] also reflected a response to the report issued by the National Council on Disability (NCD) entitled 'Back to School on Civil Rights,' which documents that no state is currently in compliance with the IDEA, and OSEP monitoring needed to change to address this national noncompliance" (USDOE,

2002, Part IV, p. 42). The report identified current noncompliance rates in dozens of areas specific to IDEA statutes. Most notably, “Fifty-seven percent were not implementing an effective monitoring system that identifies all systemic noncompliance by local school districts. Fifty-four percent of states monitored had not ensured the correction of noncompliance identified through their complaint and monitoring systems. In 43% of the states, shortages of teachers and related services providers contribute to a failure to provide needed special education services…, 3 of the 21 (14%) states monitored in 1998-2000 were in noncompliance with the requirements related to parents attending IEP meetings or participating in placement decisions. (Part IV, P. 50)”

Schools have a legal obligation to provide appropriate services to students who have disabilities. McCarthy (1993) and Opuda (1995) note that special education laws require that availability of resources shall not control the determination of student need, nor limit the provision of needed services. This becomes a very difficult dilemma for school administrators who have to balance a budget for all students, while assuring special education students receive appropriate services. Administrators walk a fine line when deciding *what* services students need while cognizant they cannot afford to provide many of the services anyway.

Moore-Brown's (2001) "The administrative predicament of special education funding" helps introduce a special edition of *Journal of Special Education Leadership (JSEL)* dedicated to special education finance. Moore-Brown writes, "While the heart of a special education administrator believes that the cost is not the issue when providing services to children, the reality . . . shows us that cost *is* an issue" (n. p., italics added). Boscardin's (2001) contribution to the JESL special edition notes a paradigm shift among

stakeholders, “As available resources have diminished over time, we have seen the emphasis in discussions shift away from issues of effective service delivery models to the availability of funds” (n. p.). More recently, Parrish, Harr, Wolman, Anthony, Merickel and Esra’s (2004) research on special education funding nationwide, noted that Oklahoma reported the lowest average expenditure per special education student and that Oklahoma superintendents believe they do not have the money to provide legally mandated services (p. 32). Although the budget verses service dilemma may seem insurmountable, service-provision decisions still have to be made.

Litigation

Issues surrounding provision of services to individuals who have disabilities are decided in today's courts on a continual basis. This condition is brought to the forefront by Newcomer and Zirkel (1999) who contend that litigation is a prominent concern that affects all stakeholders in special education and by Zirkel’s (1997) research that revealed an "explosion" (p. 341) in special education litigation. Whitney (1998) notes widespread evidence of longstanding conflicts among educators and policymakers in an article reviewing state vs. school finance litigation. State level contributions to the special education funding crisis are exemplified in Sielke and Russo’s (1999) review of State of Michigan Supreme Court decision: Durant v. State of Michigan; A 17-year battle between school districts and the state government over special education funding responsibilities. This litigation initially yielded a $212 million settlement that subsequently grew to $770 million after further review by state legislators. This was $770

million dollars that the states' school districts were forced to operate without, prior to the court's decision.

IEP Decision-Making Process

The population of concern is students affected by decisions regarding special education service provision. When a child is having difficulties progressing in the general curriculum and a disability is suspected, parents, teachers and administrators converge as an IEP team. Subjective perceptions and objective data are used by team members to determine if a child has a disability, what that disability is, and, the appropriate accommodations needed to allow the student to benefit from her or his educational opportunities. Ideally, these decisions are based on a collaboration of team members' views on what the student needs, within the parameters of prevailing laws. This federal mandate is commonly referred to as Free and Appropriate Public Education (FAPE) and is thoroughly outlined in the Individuals with Disabilities Education Act (IDEA '97, 1999a). When there is disagreement between the parent and the school as to what services constitute appropriate accommodations, the school makes the final decisions (IDEA '97, 1999b). The laws that govern how special education service-provision decisions are made expressly prohibit schools from considering the cost of a potential accommodation when deciding the appropriateness of that accommodation (Opuda, 1995, p. 12; McCarthy, 1993, p. 280).

When considering a school's responsibility to provide equal educational opportunities to an individual student who has an identified disability, a variety of

decisions are made about what constitutes appropriate accommodations to the disability. Most notably, these accommodations will come in the form of placement, and, of both supportive and related services. Research by Opuda (1995), Due Process Coordinator for the state of Maine, determined that cost may not be a factor when determining if a placement/service is in fact appropriate (p. 14). Although this standard is still questioned in various courts, (see Thomas and Rappaport, 1998, p. 13), Opuda's positions are documented in his study by frequent reference to Office of Civil Rights (OCR) and Office of Special Education Programming (OSEP) rulings. Opuda further delineates positions concerning "cost as a factor" by stating that cost *may* be considered when choosing between two or more appropriate placement/service plans (p. 14). As the stressors on relationships between service provision and cost of services become more apparent, so does the rationale for investigating the repercussions of such.

Scope Of The Problem

Research Outcomes

Research on educational best practice can be confounded when the effects of fiscal contingency are not considered. MacMillan, Sipperstein and Gresham (1996) studied the classification of mild mental retardation without challenging the impetus of funding incentive. “Terms like ‘6-hour retardation’ similarly imply a capricious classification of children by schools challenged by the fact that such children are ‘not retarded’ in environmental settings beyond the school’s walls”

(p. 365). Authors concluded with the need for greater diligence in classification approaches. Hosp and Reschly (2002) subtly note the MacMillan et al. study's inattention to funding contingencies as they discussed how classification of students pertained to their own study (p. 225). Hosp and Reschley continued, "Depending on factors such as… monetary reimbursement formulas, states may report serving similar number of students in the categories…or vastly greater numbers in one category over the other" (p. 226).

The reader may consider that education statistics are used as database for research in other disciplines that may be even less attuned to the effects of budgetary manipulations. Kanaya, Scullin and Ceci (2003) report the *Flynn Effect,* which requires IQ tests to be periodically re-normed, in effect making the tests harder. Re-norming was shown to have had a significant effect on the IQ scores of approximately 9,000 special education students sampled. Authors noted related policy and funding issues as caveats, but did not control for fiscal trends that could have confounded their findings (p. 789).

Parent/School Relationships

A problem for parents and schools (and ultimately the student) is that disagreement over service provision damages the parent/school partnership that is essential for successful educational outcomes. Newcomer and Zirkel (1999) note, "Relationships between parents and districts that are fractured by the adversarial system bode ill for a successful team approach, over a period of years, to educate a student with disabilities" (p. 479). Katsiyannis and Maag (1997) state the need to "minimize the prospect of adversarial relationships between both parties and maximize the benefits for

children" (p. 460). Garriott, Wandry and Snyder (2000) write, "Prior research in the area of parental involvement and participation in the IEP planning process provides an overall distressing commentary on the state of affairs in parent/ professional relationships. This state of affairs is regrettable because the IEP conference appears to be one critical juncture during which the stage could be set for fostering collaborative, interactive relationships between parents and professionals" (p. 3). The damage to partnerships, so to speak, is greatly intensified when there is confusion over the *source* of disagreements, i.e. the fact that fiscal concern affects schools' programming decisions.

Since a school cannot both agree with parents about the services a student needs and then state they don't have the money to provide the service, there is nothing left but anger and confusion. Garriot, et al. (2000) note that families of children with disabilities often feel disenfranchised and alienated and that parents are disturbed about the quality and quantity of communication between themselves and the professionals. Confusion over why schools and parents disagree about service provision creates conflicts and prevents a unified approach to problem solving at the classroom, district, state and national levels.

Litigation Rates/Costs

Current special education laws (see IDEA '97, 1999a) were born out of civil rights litigation in 1954 that afforded students who were African-American the right to equal educational opportunities. Over time, advocates of children with disabilities spurred litigation and legislation that eventually guaranteed students with disabilities that same right (Wright & Wright, 2000). A variety of issues are attended to in special education

litigation, but there exists an overreaching theme of whether or not students who have disabilities are afforded the rights guaranteed them by law. That is, as people who have disabilities, courts consider if they are receiving equal educational opportunities, and as students who have disabilities, courts decide if they are receiving an appropriate education. Newcomer and Zirkel (1999) maintain that courts are obligated by principles of "academic deference" (p. 470). Authors refer to case law that determined courts should only intercede in educational issues when civil rights are in question and not "to substitute their own notions of sound educational policy for those of the school authorities..." (Board of Education, 1982, p. 206).

As judicial activity indicates merit to the concern described here, additional perspective is provided by NCD Chairperson's introduction to *Back to School on Civil Rights* (NCD, 2000). In her letter to the President of the United States, President Pro Tempore of the U.S. Senate, and to the Speaker of the House of Representatives, the presentation opens with a firm and clear admonishment of current and past administrations' enforcement of special education laws. This admonishment for non-enforcement occurs in the wake of the "widespread non-compliance" (p. 12) documented in the report which its self was based on government sponsored compliance reports used as data sources. The focus of concerns stated in the NCD report, and those of Congressman Burton noted earlier, are primarily related to enforcement of existing laws (pp. 1-12). Non-enforcement of existing laws may be the epitome of conflictual relationships between special education litigation and legislation.

Early Perspectives

The perception of public instruction institutions as non-benevolent was present when the first special education laws were drafted in 1975. The historical exclusion of children who have disabilities from public schools is documented in recent government reports such as *The Twenty-second Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (USDOE, 2000, p. V) and in *Back to School on Civil Rights* (NCD, 2000, p. 10). In a like manner, research generated in private sectors, e.g. Worster (2000, p. 17), Crocket (1999, p. 545) and Danial (1997, p. 407) reference these early conditions as they frame the pertinence of their current studies. When the first special education laws were enacted, Kurlioff (1975) questioned the logic of "asking the same professionals who had excluded handicapped children in the past to now ensure their right to an appropriate education" (p. 336). While the degree to which this dissension has pervaded public schools is well evidenced in advocacy literature, law reviews and litigation research, the existence of controversial (Marchase, 2001), legislation mandating mediation services for special education disputes speak volumes to this effect. (See IDEA ’97, 1999c; CEC, May, 2004) The movement to alleviate conditions of discrimination (i.e. systemic denial of appropriate educational services) against students who have disabilities exists on the fronts of advocacy, litigation, and legislation. Regardless of outcomes in

forums where denial of services is debated, critical relationships between administrators, teachers and parents remain clearly at risk (see Glennon, 1993, p. 1.).

Perspectives on Finance

Three short articles by Moore-Brown (2001), Boscardin (2001), and Parrish (2001) introduce a special edition of Journal of Special Education Leadership (JSEL) dedicated to special education finance. Moore-Brown states, "The administrative predicament of special education funding" briefly outlines her perceptions of a special education funding crisis and the impact of such on service provision and cohesion among administrative/teaching staff members. "Special education administrators are well aware of the factors that contribute to the funding crisis for our programs... Funding discussion [with other education administrators] always begins by explaining the underfunding [sic] of special education at the federal level" (Moore-Brown, 2001, n. p.). Boscardin (2001) notes, “With fewer resources, new tensions have developed. Fiscal choices have become more complex because the federal and state governments mandate services but have not fulfilled funding obligations” (n. p.). Parrish (2001, n. p.) discusses the unique position of special education finance as being a public concern but, like special education itself, is somehow outside the realm of informed awareness (see also Parrish & Guarino, 1999). More specifically, Parrish notes these concerns within the context of educators, special educators and policymakers, and suggests disparity affects provision of appropriate special education services (see also Whitney, 1998). Most recently, CEC headlines, “Congress Reneges on Promise to Support the Education of Children and Youth with Disabilities.” Authors continue with, “CEC is disappointed, concerned, and outraged at

Congress's cuts in appropriations for special education. Not only is Congress failing to live up to the glide path to full funding promised in the IDEA reauthorization, it is pushing us backwards in funding and in the quality of educational services our schools can provide. ARLINGTON, VA, NOVEMBER 23, 2004 -- The Council for Exceptional Children (CEC) is shocked by the fact that Congress undermined the newly reauthorized Individuals with Disabilities Education Act (IDEA). Just two days after Congress voted its approval for the reauthorization of IDEA, including a plan to fully fund special education in six years, Congress went back on its word: it appropriated $1.7 billion dollars less for special education than it promised in the IDEA reauthorization. In fact, Congress's spending bill is short the $481 million President Bush requested for special education" (CEC 2004, n. p.). While much of the debate and litigation regarding special education finance centers on who pays for what, the issue of un-funded and under-funded federal mandates puts school district administrators in difficult positions (See Moore-Brown, 2001). Realizing the turmoil that this crisis in funding causes among bureaucrats and administrators, it is logical to consider the ramifications on programming decisions and service delivery at the classroom level.

Summary and Conclusion

There are myriad of reasons for conflict over the best way to educate a student with special needs, but the cost of special services exists as a primary, yet hidden issue in most disputes (McCarthy, 1993). Federal law mandates that all students who have disabilities are to receive an appropriate education with a uniquely designed Individual Education Plan (IEP) that accommodates that disability, thereby affording the student an

opportunity to receive educational benefit (IDEA '97, 1999a). Federal law requires that appropriate educational accommodations to a disability are to be determined without regard to cost (Moore-Brown, 2001; Also, see Opuda, 1995), and that these accommodations are to be implemented at public expense (IDEA '97, 1999d; 1999e). The problem is that despite these laws and the related legislation designed to uphold them, there is extant evidence that noncompliance is rampant (NCD, 2000) and, that systemic denial of appropriate services exists (USDOE, 2002).

A small body of special education research reveals relationships between demographic and service provision variables that demonstrate the presence of inappropriate, cost-related practices occurring across large populations, in a systemic manner (e.g. Cullen, 1999; Greene & Forster, 2002; McLaughlin & Owings, 1992). The purpose of this research is to explore how budgetary concerns affect expenditures during the service-provision decision-making process. In turn, the problem of systematic denial of special education services may be broached with more positive outcomes. This study investigates the hypotheses that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) and by Student Type (aggressiveness) by asking a sample of elementary school principals to choose services for students while being differentially sensitized to service costs. Resolving questions of how financial pressures affect how money is spent on students may provide directions for a more efficient use of resources for all special education stakeholders.

CHAPTER II

LITERATURE REVIEW

The following studies have considered the influence of financial concerns on special education resource allocation in a variety of ways. Investigations at the national, state and individual level have all yielded similar results, that is, fiscal pressure exerts undue influence(s) on service-provision decisions and subsequent expenditures. Eight studies are presented to demonstrate past efforts of examining effects of fiscal influences and frame the necessity of the current study. Research by Chambers, Perez, Harr, and Shkolnik (2005), and, Harr and Parrish (2005) will provide an overview of special education spending practice followed by investigations more specific to resource allocation reactivity. Quantitative studies have utilized demographic characteristics, fiscal contingencies and service-provision outcomes as variables (McLaughlin & Owings, 1992). Qualitative studies have used surveys and interviews to learn about educators' perceptions regarding the presence and effects of fiscal pressures (Hasazi, Johnston, Liggett, & Schattman, 1994). Quantitative/qualitative combined studies have considered administrators' perceptions of significant findings from other studies (Dempsey & Fuchs, 1993). Quasi-experimental investigations have explored shifts in service-provision rates before and after funding formula changes, and have compared service-provision rates across states using different funding strategies (Cullen, 1999). No study has examined the

systematic reactivity of administrators' spending behaviors when exposed to graduated levels of financial pressure.

Special Education Spending

Research by Chambers, et al. (2005) examined special education expenditures from 1969 through 2000. This study reviewed the findings of the Special Education Expenditure Project (SEEP) regarding spending during the 1999-2000 school year, and, compared estimates from SEEP to three previous expenditure studies. This SEEP study was conducted for the American Institute for Research and funded by a grant from the U.S. Department of Education, Office of Special Education Programs (OSEP). Previous studies were conducted by the University of Wisconsin, The Rand Corporation and the Decision Resources Corporation and respectively estimated special education spending for the 1968-69, 1977-78 and 1985-86 school years. The SEEP project was based on surveys reflecting a sample of 10,000 students taken from over 1000 schools across 45 states. No information was provided on the funding sources or sampling strategies for the three previous studies though authors do note instances when cautious interpretation of comparisons are warranted.

Findings by Chambers, et al. (2005) are presented as dollar values for special education services and as ratios contrasting special education spending to general education spending. After adjusting for inflation, authors noted average spending per special education student has risen substantially over the past 15 years though average spending per general education student has grown even more. "As a result, the ratio of special to general education spending has declined during this period" (p.12). Comparing

the 1985-86 estimate of $9,858 to the 1999-2000 estimate of $12,474 suggests more money was spent on the average special education student in the latter years. However, since the cost of general education grew more than the cost of special education, these figures are not comparable. Chambers et al. reconfigured the estimates as additional expenditures to allow a direct comparison in dollars and as in ratio form. Additional expenditures per special education student were estimated at $5,532 for 1985-86 and at $5,918 for 1999-2000, which again suggests more money was spent on special education. The ratio of money spent on special vs. general education was 2.28:1 for 1985-86 and declined to 1.90:1 for 1999-2000, quite the opposite of what the dollar values alone would indicate. "The declining per pupil spending ratio simply illustrates that this rising overall expenditure is much more attributable to increased special education enrollments than to expenditures on relatively few additional numbers of students with severe [expensive] disabilities (p. 12, brackets added). Authors note the importance of this distinction when considering policies for managing special education budgets.

Developing ratios instead using of dollar values allowed two further comparisons by Chambers, et al. (2005). First, ratios of special education expenditures vs. general education expenditures were compared across four school year increments; 1999-2000 as noted in the SEEP study, 1968-69 in a study by Rossmiller, Hale, and Frohreich (1970), 1977-78 studied by Kakalik, Furry, Thomas, and Carney (1981) and for 1985-86 in work by Moore, Strang, Schwartz and Braddock (1988). The three studies that preceded the 1999-2000 SEEP study all showed increases over time for 1) expenditure per special education student, 2) additional expenditure per special education student and 3) ratios of expenditures per special education student vs. expenditures per general education student.

Assuming all four studies produced comparable figures, Chambers et al attributes increases in spending to "growth in the numbers of students served in special education programs" (p. 8). A second comparison made in the SEEP study alone, considered expenditures, and expenditure ratios, of seven states and the national average. Authors found that the "Total real spending on the average special education student ranged from $10,141 to $15,081" and that the national average was $12,449 (p.8). This was true even after adjustments for geographic variations in the costs of education were factored in. Not only was there a large variation in overall spending per special education student across states, authors noted states who spent the most for special education students spent the least on special students in general education settings. Further, states that spent more money on education (both special and general combined) spent more on special education alone. Authors attributed spending differences to many factors but made special note of "differences in the policies and practices associated with the identification and funding of programs for students with disabilities" (p.9).

Chambers, et al. (2005) research sheds light on questions of how much money is spent to educate students with disabilities. While total spending on students with disabilities was 21.4% of the total spent on educating all students in the U.S., only 13.9% of spending to educate students with disabilities occurs outside of general education. Spending on special education is on the increase, but much of this can be attributed to higher numbers of students served as opposed to more money being spent to educate any given student. High identification rates coupled with low cost (general education settings) services may actually serve to generate revenues. Possibly the most important finding for

all stakeholders is exposing the complex nature of determining and interpreting special education expenditure estimates.

In another study funded by the American Institute for Research, Harr and Parrish (2005) considered the impact of federal contributions to states' expenditures on special education services in years surrounding the 1997 IDEA reauthorization. The formula for federal contributions under IDEA '97, commonly referred to as Part B funding, began to phase-in during the 1999-2000 school year. Although Part B funding increased from $4.3 billion to $8.9 billion from FY 1999 to FY 2003, authors were concerned whether this increase outpaced inflation and new special education enrollments. Under the new formula, Part B contributions were based on an initial threshold, states' total pupil enrollment, and a poverty factor rather than a count of special education students alone. Harr and Parrish introduced the terms Program Growth and Program Enhancement to assess the impact of Part B increases. Program growth refers to conditions where Part B increases contributed to a state's (or district's) ability to keep pace with rising special education enrollments but did not allow for improved services. Program enhancement suggests conditions where Part B increases exceeded costs associated with increased enrollments and actually allowed expanded or improved services for students with disabilities. Authors note that variations in Part B contributions over the years studied, including projected variations through FY 2011, depend on many factors including the threshold inherent in the phase-in process.

The change in federal policy (Part B allocations) ended the relationship between the number of identified special education students and funding amounts (Harr & Parrish, 2005). Authors noted, "as expected, that the difference between the highest and lowest

funding amount per special education student across the 50 states grew increasingly pronounced after the new formula was instituted in 2000" (p. 31). In FY 2003 federal revenues in the state receiving the most per student were 43% higher than in the state receiving the least ($1,503 vs. $1,051). This difference is projected to be over 100% by the year 2011 with estimated figures of $3,271 vs. $1,518. These differences would allow some states to provide program growth as needed and other states to enhance programming. While these differences in federal per pupil contributions are designed to be more equitable across states and decrease over-identification by states, the eventual effects of such are questionable.

Under the new system, states (and districts) with higher percentages of special education students identified will receive fewer federal dollars per special education student than those states with lower identification rates. This disincentive to identify students needing special education services will increase yearly in increments as the new Part B system percentage contributions increase. Future research may focus on variability of program growth (identification rates across states, and within states,) in the post-reauthorization era. Studies on program enhancement (expanded and improved services) will also be important, but perhaps more difficult to embrace. The effects of more federal dollars going to states for special education will always depend on funding strategies and implementation approaches.

National and Multi-State Investigations

Research conducted by McLaughlin and Owings' (1992) investigated relationships between national demographic and fiscal variables at three points in time

between 1976 and 1984. This study was funded by a government grant although the principal investigators were employed by an advocacy agency supported by a public university. The study was primarily conducted to gain perspective on how the initial special education laws had been implemented during the first eight years. Authors noted previous research (See Danielson & Bellamy, 1989; Noel & Fuller, 1985) that found differences in how states implemented special education laws regarding identification and service provision. The 1992 study expanded previous investigations by exploring the interrelationships among a broader number of both fiscal and demographic variables regarding special education practice.

Authors examined relationships between seven independent variables (four fiscal and three demographic) and two dependent variables (identification and placement). Within-year correlations on all variable combinations were determined for all three school years studied i.e. 1976, 1980 and 1983. Previous research (see Ginsberg, Noell and Plisko, 1988) prompted authors to *avoid* comparing independent and dependent variable relationships across individual states in favor of grouping states (quartiles) according to rankings on contextual (independent variable) features. Analysis of Variance (ANOVA) instead tested for differences between groups of similar states (i.e. across quartiles) for relative differences in identification and placement rates, in three different years (McLaughlin & Owings, 1992, p. 249).

Additionally, McLaughlin and Owings (1992) found weak to moderate correlations demonstrating that special education service-provision (identification and placement variables) was related to states' characteristics (fiscal and demographic variables) across all years. In 1976 only, students in rural districts were less likely to be

identified as needing special education than students in highly populated areas. In all years, students in wealthy districts were more likely to be identified as needing special education services (Learning Disabled *LD*) than students in poorer districts. In all years studied, students were less likely to receive special education services (LD and Emotionally Disturbed *ED*) if they lived in a state that received low federal funding for general education, than those who lived in states that received higher federal contributions. Similarly, in all years, rural students were less likely to receive special education services (LD and ED) than urban students. Students in poverty districts were less likely to receive special education services (LD in 1976 and 1980, and ED in 1983) than were students in non-poverty districts.

Authors accept the intense parallel relationship between increasingly restrictive levels of placement (i.e. where an identified special education student receives services), and increased expense to districts, as a given. "Cumulative placement rates in special classes or separate schools and all more restrictive placements would appear to lower student/teacher ratios, increase the use of separate physical facilities and result in higher costs" (McLaughlin & Owings, 1992, p. 259). The reader may bear this in mind when considering that placements in 1976 were more likely to be in a regular education classroom if the student lived in a rural district than in a non-rural district. During 1980 and 1983, special education students in wealthier districts were more likely to be placed in special education classrooms than were special education students living in poorer districts. During 1980 and 1983, special education students in rural districts were less likely to be educated in special education classrooms than their non-rural counterparts

were. Rural special education students, during these same years, had even less likelihood of being educated in a separate school than did non-rural special education students.

McLaughlin and Owing's (1992) investigation fortified earlier findings of demographic differences in service-provision in regard to student need. Authors maintain their research "represents only a preliminary step in understanding the influence of state-level socioeconomic factors on identifying and serving the nation's children with disabilities" (p. 261). The next ten years saw substantive works from varied sources consider the question of undue influence of fiscal contingency on special education service-provision.

Evidence of the role that financial concerns play in service provision decisions comes from Hasazi, et al. (1994) work. Least Restrictive Environment (LRE) is usually considered in terms of physical placement, that is, where a student is educated, and reflects the intent to normalize the student's educational experiences while accommodating that student's disability. LRE exists in conjunction with, and not contrary to, the Continuum of Alternative Placements (CAP) requirement that of a range of physical placements be available for service-provision decision makers to choose from (p. 491). (See also IDEA' 97, 1999f; 1999g.) Generally, the more restrictive a placement is, the more expensive it is to educate a student within that placement (See Singer & Raphael, 1988; McLaughlin & Owings, 1992, p. 259). However, there is financial incentive that encourages restrictive placement of students for a variety of reasons primarily related to states' funding strategies.

Hasazi, et al. (1994) study focused on six states that were determined by previous research (see Danielson & Bellamy, 1989) to be either high or low users of restrictive

placements for special education students. Within the six states, 18 sites were chosen and from those sites, 350 interviews were conducted with a variety of special education stakeholders and the interviews yielded 7000 pages of transcription. The interview protocol was based on 14 questions, "designed to explore factors that contribute to the shaping of a state's or district's approach to the implementation of LRE" (Hasazi et al., p. 493). Data analysis was based on "coding and developing themes, using the process of constant comparison." and "Eventually, the coding scheme consisted of 25 major codes and 140 subcodes" (p. 493). "All coded interviews were entered into Ethnograph, a software program used for managing and sorting qualitative data" (p. 494; see also Tesh, 1990). Reference to financial concern occurred only once within the 14 questions, with the word *money* appearing in question number six. The word *finance* emerged as one of the 25 major codes. In the final analysis, six factors emerged and finance was predominant. Hasazi, et al. (1994) state, "First, finance emerged as the cornerstone of influence at all of the sites. It was a 'given' or the obvious factor" (p. 504). "Interviewees at all 18 sites identified finance as essential to determining how LRE was being implemented" (p. 496). Authors' final conclusions focused on implementation of policy, "As we came to see it, implementation was chameleonlike [sic], constantly changing its character. Sometimes it showed the rational face of knowledge and values; at other times, it was the reflection of the forces of structure and politics" (p. 506).

Greene and Forster (2002) performed research for the Center for Civic Innovation (CCI) as part of the center's Civic Report series division dedicated to education reform. CCI is a non-profit organization "dedicated to non-partisan pragmatic public policy solutions" (n. d., n. p.) and its self is a division of the Manhattan Institute for Policy

Research (MI) that supports and publicizes "research on our era's most challenging public policy issues" (MI, n. d., n. p.). Green and Forster describe the effects of fiscal incentive inherent in some states' funding systems as "a financial reward- a bounty, so to speak" (p. 4) and actually label such practice as "perverse" (p. 9). Although dramatic language may suggest bias (noted by Parrish, 2002) in research practice and reporting, Greene and Forster do recognize the need for careful interpretation of their study's results (p. 7). This concern is more clearly echoed by Parrish's critique of the *bounty funding report* where he tentatively supports Greene and Forster's general contentions about fiscal influences, but vehemently questions their analysis, results and presentation. (See also Parrish, 2003, pp. 10-14.)

Arguments aside, Greene and Forster's (2002) study looked for relationships between special education identification rates and fiscal incentive by comparing the rates of increasing enrollment in states that had *bounty systems* verses those that did not (i.e. *lump sum systems*) The authors concluded, " State funding systems are having a dramatic effect on special education enrollment [identification] rates. In states where schools had a financial incentive to identify more students as disabled and place them in special education, the percentage of all students in special education grew significantly more rapidly over the past decade" (p. 8). This study investigated rate changes during the span of 1991-92 through 2000-01 school years and included all states. States were designated as either bounty or lump sum with regard to the funding system each employed. Funding system classification, that is bounty versus lump, was determined by whether or not the system provided additional funding for special education according to either special education enrollment, or overall enrollment, respectively. Authors found that 62% of the

increased enrollment (noted in 2000) in states that had bounty systems can be attributed to the effects of that system. The 62% figure represents almost 400,000 extra students that translate to additional spending of over 2.3 billion dollars per year (p. 8).

Parrish's (2002) critique of Greene and Forster's (2002) work asserts that methodological flaws preclude authors' claims of actually demonstrating causal relationships, however he does not dispute the premise that these relationships exist. Parrish's primary argument, i.e. Greene and Forster's analytical flaw, is that one state with an enormous population of students, coupled with a very low special education enrollment rate, confounded the results across all states. The authors agreed that the sharp drop in national special education enrollments in 1998, noted in Greene and Forster (p. 7), occurred because of the funding system change (from bounty to lump sum) in California in that same year. This condition is similar to Cullen's (1999) pseudo-experimental investigation, and, the similar results present convincing argument that state funding systems greatly affect service-provision decisions.

Single State Investigations

In a private study, published in a refereed special education advocacy journal, Dempsey and Fuchs (1993) investigated effects on identification and placement rates related to changes in special education funding strategies. During the 1979-80 through 1987-88 school years, Tennessee shifted from a flat student based formula to a weighted one (p. 437). "Our correlational archival and survey data indicate, however tentatively, that placement decisions can depend on a state's policy for distributing special education monies" (p. 442). The study used archival data from the state's annual summary reports

to calculate changes in service provision in relation to the funding change. These results were then included as an information sheet, with a survey, to be completed by the state's directors of special education.

Dempsey and Fuchs (1993) analysis of archival data revealed that, "In 1984-85, the first weighted-rate year, there was a dramatic jump in the number of *weighted* [special education] children, an increase that continued in subsequent years" (pp. 438-9, italics retained, brackets added). Authors noted, "as funding shifted from a flat to weighted rate…many students statewide moved [i.e. placement]…from a less to more financially supportive, and more restrictive, school programs" (p. 442). Authors concluded, "The close temporal connection between a) the change in Tennessee's reimbursement formula and b) the special education directors' changes in student placements suggest that the directors' decision making was influenced by financial concerns" (p. 442). While these results confirmed previous theory about effects of funding mechanisms on service provision, the survey results presented new concerns about respondents' bias under conditions of perceived liability.

Dempsey and Fuchs' (1993) discuss the results gleaned from the qualitative data on page 442 of their published work. The state's directors of special education were provided clear evidence of the link between financial incentive and service provision occurring in their state and were then surveyed about these conditions. Of the directors who believed changes in *statewide* service provision were similar to changes in their own districts, almost 60% maintained that statewide trends were responsive to students' needs rather than monetary incentive. The other 40% believed the statewide changes in service provision were clearly responsive to financial concerns, and *not* to students' needs. Of the

group that admitted statewide service provision was contingent on finance, 80% contended this does not occur in their own district while only 20% admitted the obvious. "In other words, respondents perceived that other directors were more likely than themselves to place money ahead of service as factors in student placement decisions" (p. 442).

Cullen (1999) studied how fiscal incentive in Texas during 1991-1997 initiated a rise in the number of students identified as having disabilities requiring special education services. This work exists as part of the National Bureau of Economic Research's (NBER) Working Paper Series (NBER, n. d.) and may be considered less vulnerable to bias than special education research funded by stakeholders. Cullen found that a 10% increase in revenues led to 1.4% increased identification rate. Over six years, 35% of the increased identification rate can be attributed to fiscal incentive factors. "[The] fact that non-majority students and students in fiscally constrained districts are more likely to be classified in response to fiscal incentives suggests that school districts may be classifying students for fiscal gain" (p. 3).

Although complicated to the layperson, Cullen (1999) outlines the clear effects of seemingly minor changes to Texas law, i.e. "school finance equalization scheme" (p. 8), while retaining the same basic funding formula (p. 10). During the years studied, Texas utilized a two-tier grant system that considers the number of students in a district as well as that district's relative wealth. A special education student is *weighted* and then *counted* as a regular education student in the fiscal formula that determines the amount of funding a district receives from the state. Legal reform during the 1993-1994 school year resulted in high wealth districts identifying more students as being disabled and thereby

increasing the amount of revenue received. “Disability rates in high wealth districts grew at nearly double the rate of low and middle wealth districts” (p. 18). This before and after effect, i.e. a pseudo-experimental condition, provides strong support for Cullen’s summary statements. Combined with evidence from her concurrent study (Cullen & Figlio, 1998), Cullen concludes that not only do “localities manipulate special education populations to increase leverage on state funds” and “districts may indeed reclassify students for fiscal gain,” but these additional resources are sometimes diverted to other (i.e. outside of special education) programs (1999, p. 27).

Subjective Perceptions of Fiscal Contingencies

Montgomery (1995) studied the effects of reforming state funding strategies three years after implementation. She conducted this qualitative investigation for the Center for Special Education Finance (CSEF) and her report is part of CSEF’s State Analysis Series (CSEF, n. d.). Although CSEF itself is supported by government funding, it is a subdivision of American Institutes for Research (AIR), which is a nonprofit program evaluation corporation that claims commitment to “remaining strictly independent and non-partisan in all matters” (AIR, n. d., n. p.). Telephone interviews helped Montgomery gain perspective on stakeholders’ perceptions of issues leading to reform and on the impact of reform. While there was considerable disparity between stakeholders there were also many points of agreement noted. An overriding theme was perceptions of how both systems, i.e. pre and post reform, created fiscal incentive affecting identification and placement.

Montgomery's (1995) stakeholders found reform allowed for "elimination of incentives for placements based on specific disability labels." (p. 25), and, that "flexibility in the use of funds had provided greater incentives for placements within regular education classrooms" (p. 25). Montgomery reported spending cuts left some parents dissatisfied with choices between less restrictive (but poorly supported) learning environments vs. highly restrictive placements. The reformed system provided that special education services would be paid for by a general education fund that received additional state money for each special education student identified. The district received twice the amount for a special education student as it did for a regular education student, and, that additional monies were not earmarked for special service provision. A noteworthy caveat was the ceiling on the number of special education students that could be identified; up to 11% of the overall district enrollment received the 2:1 funding and above 11% may receive additional funding at a reduced rate. This produced a clear incentive to identify students at a rate close to 11%, regardless of need. "One director suggested that the new formula 'put a bounty on special education students,' creating an incentive for identification" (p. 18). "One director believed there was a strong incentive for special education directors and some superintendents to maximize funds by maintaining their counts at 11%" (p. 18). Another director noted direct pressure from the district's superintendent to increase their identification rate from 6% to 11% after the new law was enacted. Districts changed policies for kindergarten students who were struggling. Instead of simply providing supports in the general classroom, teachers were told to identify these students through the formal special education referral process. Conversely, Montgomery noted one district lost $300,000 by decreasing their count 1.5%

due to students' changing needs. That is, improved academic performance actually cost the district money.

Interested readers may note the inherent belief among stakeholders that upper-level administrators control the final decisions of the IEP team. This condition is epitomized by one special education director admitting to this condition, "pushing [teachers] to label" (Montgomery, 1995, p. 18, brackets retained). Although the Oregon study was designed to show what stakeholders believed about the reform provisions' impact on special education, much was inadvertently exposed about unlawful determinants of service provision.

Summary and Conclusions

Previous studies of fiscal contingency and resource allocation reactivity have examined the effects of fiscal variables and demographic characteristics on special education service-provision and resource allocation outcomes. Results of earlier studies, although disparate on some points, were unified in their consensus that undue fiscal influences exist and need to be minimized. No study has explored effects of fiscal influence on the resource allocation decision-making process, per se. This current investigation considers expenditures by administrators artificially sensitized to fiscal pressures and, how results of induced fiscal sensitivity may be reactive to student types. Understanding the mechanisms that lead to outcomes is the type of emergent knowledge that may someday enhance efforts at curbing the detrimental effects of fiscal contingency on educational opportunities for student who have disabilities.

CHAPTER III

METHODOLOGY

To investigate the hypotheses that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) and Student Type (aggressiveness), principals were asked to choose services for students while being differentially sensitized to service costs. Principals in four artificially created Fiscal Sensitivity groups were asked to choose services for two hypothetical students, via Profile/Service Surveys, in the form of a service level score. Service Level scores were later transformed to Expenditure values (dollars) according to estimated costs for the services chosen. Finally, a 2 x 4 ANOVA was utilized to explore relationships between mean Expenditure values. It was expected that Fiscal Sensitivity would influence Expenditures independently of student need. A conceptual overview is provided prior to a discussion of the target population and sample, variable configuration, instrument construction, validity and reliability, and, procedure.

Conceptual Overview

This investigation was based on apportioned data derived from 500 potential subjects randomly selected and randomly assigned to four Fiscal Sensitivity treatment conditions. Subjects were unaware that four conditions existed, of differences between

treatment groups, or, of their own group membership. The Fiscal Sensitivity conditions were artificially created by faux dollar amounts (or no dollar amount) affixed to special education service descriptions. Each subject received two, one-page Profile/Service Surveys to complete and return. The *Profile* portion of each Profile/Service Survey described one-of-two different Student Types. The *Service* portion of each Profile/Service Survey described several service options, and was presented in one-of-four Fiscal Sensitivity formats. Therefore, eight different Profile/Service Surveys were utilized, and, each subject received two paired surveys representing both Student Types, but in only one Fiscal Sensitivity condition. Tables 3.1 and 3.2 outline the number of potential subjects and potential survey responses per treatment condition, respectively, for both Student Types combined. Again, each potential subject received two surveys.

Table 3.1: Potential Subjects Per Treatment Condition, Classification Variables Combined

	Fiscal Sensitivity (FS)			
Student Type (ST)	High FS n = 125	Moderate FS n = 125	Low FS n = 125	No FS n = 125

Table 3.2: Potential Survey Responses Per Treatment Condition, Classification Variables Combined

	Fiscal Sensitivity (FS)			
Student Type (ST)	High FS n = 250	Moderate FS n = 250	Low FS n = 250	No FS n = 250

This investigation was based on two types of independent variables, Classification (Student Type) and Treatment (Fiscal Sensitivity) and utilized one dependent variable (Expenditure). Expenditure was expressed in dollar values and was derived from the service level scores of each respondent. The statistical test was a Mixed Factorial Design; that is, an investigation of variable relationships within subjects and between groups.

The classification variable was two levels of Student Type (ST): 1) Aggressive ST, and, 2) Non-Aggressive ST. The treatment variable was four levels of Fiscal Sensitivity (FS): 1) High FS, 2) Moderate FS, 3) Low FS, and, 4) No FS. The dependent variable was Expenditure values (dollars) calculated according to subject's service level scores for each Student Type. Table 3.3 provides a conceptual view of variable types and levels.

Table 3.3: Classification Variable, Treatment Variable and Dependent Variable

	Fiscal Sensitivity Condition (FS)			
Student Type (ST)	High FS	Moderate FS	Low FS	No FS
Aggressive ST	Expenditure	Expenditure	Expenditure	Expenditure
Non-Aggressive ST	Expenditure	Expenditure	Expenditure	Expenditure

A 2 x 4 ANOVA considered relationships within subjects, and between groups for the two classification variable levels and the four treatment variable levels (respectively) regarding how much money was spent for services. The primary research hypothesis was (Main Effect-Student Types combined) special education Expenditures are influenced by Fiscal Sensitivity (financial pressure). The secondary research hypothesis was special

education Expenditures are influenced by Student Type (aggressiveness). The interaction hypothesis was Expenditures are differentially influenced by Student Types across varied levels of Fiscal Sensitivity. Table 3.4 displays the primary, secondary and interaction statistical hypotheses with the null counterparts.

Table 3.4: Statistical Hypotheses

A main effect	H_0: All $\alpha_i = 0$
	H_1: Not all $\alpha_i = 0$
B main effect	H_0: All $\beta_j = 0$
	H_1: Not all $\beta_j = 0$
A x *B* interaction	H_0: All $(\alpha\beta)_{ij} = 0$
	H_1: Not all $(\alpha\beta)_{ij} = 0$

Conceptual Summary

Each of 500 subjects received two Profile/Service Surveys and asked to complete three short tasks. First, read one student Profile/Service Survey and choose the one service level option (score) that would most appropriately serve that student. The next task was to repeat that procedure with the second Profile/Service Survey. The last task was to mail both completed Profile/Service Surveys back in a pre-stamped, pre-addressed envelope. Each respondent provided data in the form of two service level scores chosen while under the influence of one-of-four, artificially created, Fiscal Sensitivity conditions. Service level scores were transformed to Expenditure values (dollars) based on corresponding cost estimates. Mean Expenditures were compared according to a 2 x 4 ANOVA to look for relationships reflecting the primary and secondary research hypotheses.

Target Population and Sample

Target Population

Special education finance literature traditionally identifies states used in sampling procedures and subsequent investigations (e. g. Cullen, 1999; Dempsey & Fuchs, 1993; Montgomery, 1995). This practice is necessary for reliability (replication), validity (construction) and generalization (utility) purposes because states operate differently in regard to fiscal practices. This current study utilized a sample of 125 Ohio elementary school principals to represent the specific population of all Ohio elementary school principals who may serve as an administrative representative on an IEP team. In a broader sense, Keppel (1991) uses the term "non-statistical generalization" to describe the theoretical generalization of results outside of the actual population sampled. Generalizing the results of this study to other populations would certainly require cautious interpretations.

The administrative representative on IEP team has the responsibility of 1) assuring the availability of services necessary to accommodate the student's disability and 2) appropriate services are not vetoed by a higher level of administrative authority. The school's principal often serves this position on IEP teams because she or he is aware of the school's material resources, the expertise of both special and general education teachers in the building, and of other applicable resources district wide. Ohio Department of Education (ODE) provides a readily available and concise listing of its elementary schools on line (ODE, n. d., n. p.). This compilation contains enough demographic information to operationally describe each school and provides the school's address and

principal teacher's name. The state of Ohio offers many advantages to special education researchers and may be considered representative of special education service-provision nationwide. More specifically, Ohio principals experience the same financial pressures and subsequently, similar influences on service-provision decision-making, as those in other states.

Ohio principals were chosen to provide continuity within this present study. The subsequent discussions of variable configuration and instrument development note expenditure estimates and service descriptors based on Ohio data. Chambers and Wolman (1998) found that Ohio is friendly to researchers in terms of data availability, accessibility, and the general quality of disaggregated data. In fact, Ohio was recognized as one of the few states with a data system detailed enough to develop expenditure estimates according to service combinations (Chambers & Wolman) as opposed to the average expenditures across disability categories employed in most studies (Braeger, Cottle & Gee, 2000). Assuming the fiscal pressures and service-provision decisions Ohio principals experience are similar to those occurring in other states, sampling the population of Ohio principals lends good fit to this study utilizing other Ohio data.

Sampling Procedure

All Ohio schools were reviewed to compile a complete list of elementary school principals responsible for a full range of grade levels, K-8. Elementary schools in Ohio have many different configurations in terms of grade levels served within one building. Thus, it was necessary to review a list of approximately 4,000 schools and eliminate those that did not meet the K-8 criteria. More specifically, it was determined that the

operational definition of elementary schools was to be a school that served grades P, K or 1 through 5, 6, 7 or 8. This consistency was necessary to ensure that principals had similar service-provision influences and pressures across grade levels. Once a school was determined eligible, the corresponding principal's name was added to a list that eventually totaled 968 names. To assure a random sample, each name was assigned a number from 000 to 999. An initial arbitrary number was chosen from a table of 1,000 random numbers and checked for a match. Successive numbers were chosen until 500 matches were achieved.

Sample Size

Survey research must consider the question of adequate sample size along the parameters of number of subjects contacted and the number of subjects who respond. Ary, Jacobs and Razavieh (1996) note that mailed questionnaires may yield a response rate of 75-90 percent (p. 436) while others suggest a much lower rate should be expected. Green, Boser and Hutchinson's (1997) review of mail survey research noted that response rates by educators was generally greater than for the general public and noted work by Miller (1991) that found response rates across different populations of 24 percent to 94 percent.

Many educational researchers contend that at least 10-20 percent of a population should be sampled (Gay & Airasian, 2003, p. 112), although Ary, Jacobs and Razavieh (1996) note, "the accuracy of the data is determined by the *absolute size* of the sample" (italics retained, p. 437). Gay and Airasian (2003) note that "causal-comparative and true

experimental studies, [should have] a minimum of 30 participants *in each group*…although in some cases it might be difficult to attain" (italics retained, p. 112).

Considering the target population of approximately 1,000 Ohio elementary school principals, a sample population of approximately 500 principals would more than assure statistical generalization if all subjects responded. A response rate of only 25 percent would yield data from 125 subjects, or 12.5 percent of the target population. If treatment conditions did not bias response rate, projected responses would be approximately 31 per group.

Sample size is the primary factor used to control the power of an experiment, given a significance level of $p = .05$ and the inherent desire for the largest possible effect size (Keppel 1991, p. 71-2). Gay and Airasian (2003) note that an effect size "in the twenties (e.g. .28 indicates a … relatively small effect, whereas an effect size in the eighties (e.g. .81) indicates a powerful treatment" (p. 293-4). Given a significant difference between values for group means, greater response rates would translate to greater effect sizes, that is, the strength or magnitude of the reported relationships.

Variable Configuration

Two independent variables were developed to test hypothesized effects on a dependent variable concerning special education students. The independent classification variable was Student Type (ST) with two levels (Aggressive ST and Non-Aggressive ST). The independent treatment variable was Fiscal Sensitivity (FS) with four levels (High FS, Moderate FS, Low FS, and, No FS). The dependent variable was Expenditure values (dollars) derived from a service level score chosen by subjects.

Sampled principals received two Profile/Service Surveys and were asked to choose the service-option (score) that would appropriately serve each student. The Profile/Service Surveys existed in eight formats, that is, eight combinations of two classification levels across four treatment levels. Again, under the influence of an artificial Fiscal Sensitivity condition, the sampled principal chose one service level score for each of two students. The reader is provided a description and rationale for variable configurations to be followed with related information on instrument construction.

Classification Variable

A classification variable was developed to determine if results of the primary investigation (effects of Fiscal Sensitivity on Expenditure) would differentiate according to student characteristics. That is, some students may be more or less vulnerable to financially influenced decision-making, irrespective of their educational needs. Two student profiles (Aggressive and Non-Aggressive) were developed as similar other than manageability of behaviors, a component often debated as IEP teams determine the need for special services and the nature of prospective services. The student profiles focus on behaviors, academic performance, and pre-referral interventions. The student profiles do not include IDEA classification as to disability type but are similar to characteristics found among students who may be envisioned as Learning Disabled and Emotionally Disturbed.

Treatment Conditions

The treatment conditions for this investigation are four levels of Fiscal Sensitivity artificially created by faux dollar values (or no dollar values) presented to subjects on Profile/ Service Surveys. Each subject is exposed to only one of the four Fiscal Sensitivity conditions, that is, each subject operates under only one level of Fiscal Sensitivity. See Table 3.5.

Table 3.5: Treatment Conditions- Four Levels of Fiscal Sensitivity (FS)

Condition	Description
High FS	Service Level options with *exaggerated* costs
Moderate FS	Service Level options with *approximate* costs
Low FS	Service Level options with *minimized* costs
No FS	Service Level options with *masked* costs

The construct of Fiscal Sensitivity may be understood as the prominence of expenditure thoughts subjects experience while making service level choices. Only the No FS condition exists in the real world, because IEP team members do not have dollar values for services as part of the documentation utilized in the service-provision, decision-making process. No FS, therefore, would represent low prominence, or low Fiscal Sensitivity. The Low FS condition introduces dollar values for services to the subject's visual and cognitive awareness, but with dollar values significantly lower than those in the Moderate FS and High FS conditions. Dollar values in the Moderate FS condition are higher than those in the Low FS condition, producing an increased Fiscal

Sensitivity versus Fiscal Sensitivity in the Low FS and the No FS conditions. Dollar values for special services in the High FS conditions are still higher, theoretically creating a Fiscal Sensitivity condition that is more intense than in the three lower Fiscal Sensitivity conditions; No FS, Low FS and Moderate FS. A scaled Cognitive Prominence Continuum utilizing Minimal Thought of service costs and Intense Thought of service costs, as polarized extremes is conceptualized in Figure 3.1. Service costs in three-of-the-four treatment conditions are presented in conjunction with service level option descriptions, with all four conditions utilizing the same service-option choices. Note again that the two independent variables are Student Type (two levels) and Fiscal Sensitivity (four levels), and that the dependent variable is Expenditure (dollar values calculated according to service level scores). Table 3.6 presents the four ranges of service-option costs across the four identical service level option lists.

Figure 3.1: Cognitive Prominence-Conceptual Continuum of Fiscal Sensitivity

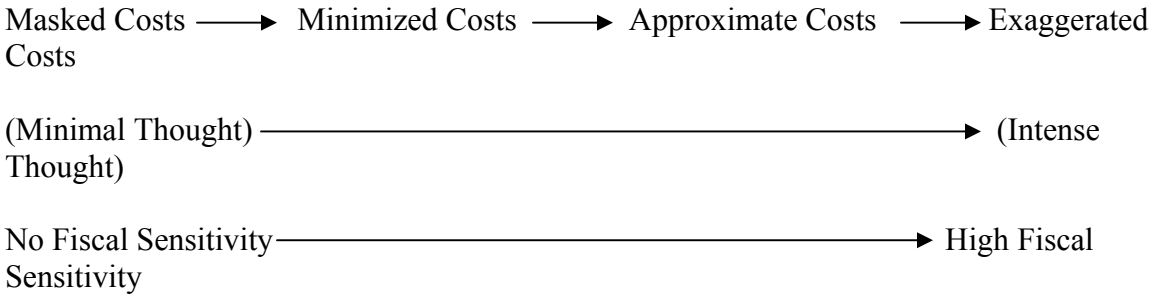


Table 3.6: Cost Ranges Across Identical Service Option Lists

Cost	Amount	Service Options	Sensitivity
Exaggerated	$1,253.00-$29,561.00	Service Options (1-7)	High Sensitivity
Approximate	$835.00-$19,707.00	Service Options (1-7)	↓ ↑
Minimized	$418.00-$9,854.00	Service Options (1-7)	Low Sensitivity
Masked	Not Applicable	Service Options (1-7)	

Any one of the three expenditure ranges should seem plausible to subjects because the dollar figures fall well within the span of expenditure amounts reported by states. In real-life situations, there is no price tag or cost-menu for special service options. Safe to say, no one knows what it costs to educate any given student who receives special services. This is due to the difficulty of compiling and disaggregating fiscal data, and because special education students require complex combinations of services.

Instrument Construction

Profile/Service Surveys

Eight one-page survey instruments were created for this investigation. Each one-page survey is comprised of two portions, 1) Profile and 2) Service. The Profile portion of each survey is a narrative description of student characteristics; a vignette. The Service portion of each survey is a table of service level choices with each identically arranged

according to service intensity, but presented with differing cost continua. There are two Profile variations and four Service variations that combine to form a total of eight different Profile/Service surveys (see Appendix A). Each subject receives two, one-page Profile/Service surveys as a pair. Although eight different surveys exist, there are only four possible pairings as each subject receives *both* Profile variations. Table 3.7 depicts each of the four possible survey pairings any subject might receive.

Table 3.7: Four Possible Profile/Service Survey Pairings

Pair #1	Aggressive Student/Exaggerated Cost
High FS	Non-Aggressive Student/Exaggerated Cost
Pair #2	Aggressive Student/Approximate Cost
Moderate FS	Non-Aggressive Student/Approximate Cost
Pair #3	Aggressive Student/Minimized Cost
Low FS	Non-Aggressive Student/Minimized Cost
Pair #4	Aggressive Student/Masked Cost
No FS	Non-Aggressive Student/Masked Cost

The paired survey pages are similar in presentation except for the fictitious student's name, one descriptive sentence that comprises the classification variables, and of course, the cost continua that comprises the treatment condition. Each one-page Profile/Service survey begins with the Profile portion (½ page) followed by the Service portion (½ page).

Profiles

The vignettes for Student Type are three paragraphs that provide narrative descriptions of students who have academic and behavioral characteristics similar to those often exhibited by special education students. The only differences between the two vignettes are students' names and one boldface/italicized sentence describing behavior problems. These two sentences serve to define the classification variable of Student Type and delineate the variable's two levels (Aggressive and Non-Aggressive). The minimal difference between student descriptions was intentionally configured to reduce

opportunity for confound or unanticipated, hence unmeasured, variance. Further, each vignette is intentionally void of a special education classification label to help avoid bias based on disability type. Table 3.8 provides a comparison of the two sentences that serve to define the classification variable's two levels. The complete vignettes are presented in Appendix B (Profile Vignettes) but are of course included in Appendix A, the Profile/Service surveys.

Table 3.8: Classification Variable-Student Behavior Descriptors Delineating Two Student Type Levels

Student	Behavior Descriptors
Mark Aggressive Student	"Additionally, Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher."
Eric Non-Aggressive Student	"Additionally, Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums."

Note: Bold italics retained in actual Profile/Service surveys.

Services

The second portion of the Profile/Service surveys is the service level option list presented as a menu of service combinations. Chambers and Wolman (1998) note that, "Students with disabilities exhibit a wide range of physical, cognitive, and emotional needs" that require "specific curricular, behavioral, and medical adaptations to facilitate learning" (pp. 2-3). The descriptions of services on all service level option lists are identical; however, surveys utilized in three-of-the-four Fiscal Sensitivity conditions include varied information about corresponding costs for the services listed. The service descriptions are brief and generic and are the exact narrative (numerical scores 1-7

added) reported by Chambers and Wolman. Presented in conjunction with their service descriptions, Chambers and Wolman produced perhaps the only special education expenditure estimates that consider service descriptions instead of average costs per student based on disability category. Average expenditures do not allow for the vast variability of service-provision costs within categories. Braeger, Cottle and Gee (2000) note that cost estimates, based on per-pupil expenditures for an average special education student, are of little utility even when a student's disability is known. "There appears to be as much variability of cost within a disability classification as there is between disability classifications" (p. 7). See Table 3.9 and Appendix A for the Service level option lists as presented on the Profile/Service surveys. This current study reconfigured Chambers and Wolman's expenditure estimates as additional costs to districts and further manipulated the data with incremental multipliers to develop expenditure ranges (Appendix C) that constitute three-of-the-four Fiscal Sensitivity conditions in this current study. The fourth Fiscal Sensitivity level was created by omitting dollar values from

Table 3.9: Service Level Option List

1	Regular Education self-contained class and general music
2	Regular Education self-contained class, resource room and general music
3	Special Class 60 % and regular self-contained class 40%, general music
4	Special Class 100%, except for general music
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music
6	Special Needs School: Full-time special class and supplemental professional services
7	Special Needs School: Full-time special class, supplemental professional services and related services

the Service level option list. Developing a service level option list as a scaled descriptor set with corresponding service level scores that could be manipulated to create artificial levels of Fiscal Sensitivity required data not usually found in special education literature.

Validity and Reliability

Validity

This current investigation is a forced choice inventory asking each respondent to make two decisions. Validity concerns are satisfied in three general manners. The respondent may consider the research relevant and important. This helps insure meaningful participation because the subject may feel invested and that the results may somehow be beneficial. Authors consider this face validity a primary concern in survey research. See Ary, Jacobs & Razavieh, 1996. Principals recognized the survey content as

familiar to the everyday decisions made by their respective IEP teams and anonymous participation allowed subjects to participate without response bias.

Secondly, the concept of construct validity asks if an instrument or investigation measures what it proposes to measure. Gay and Airasian (2003) note constructs as stepping from hypothetical towards observable while Ary, et al. (1996) refer to this concept as measuring intangibles. The service level option list as an instrument provides graduated increments in service-provision choices with inherent and/or stated associated costs to the district. The treatment conditions, No FS, Low FS, Moderate FS and High FS, represent a graduated continuum of Fiscal Sensitivity as a characteristic of respondents.

Finally, external validity requires that results may be generalized to the specific population sampled and to the broader population(s) of concern (Gay & Airasian, 2003; Keppel, 1991). Ohio principals face similar decision-making pressures and concerns as principals in other states who may operate under different funding structures; that is, all principals have to balance budgets and meet legal service-provision standards.

Reliability

Reliability is noted in terms of respondents interpreting the questions or information provided in like manner and whether investigation may be replicated with like results. Gay and Airasian (2003) define reliability as "the degree to which a test consistently measures whatever it is measuring" (p.141). All respondents receive the same specific information about students (i.e. profiles), although the information is intentionally quite limited. An abundance of information is often not available to IEP

team members and may even be superfluous outside of the need for thorough documentation (Smith, (1990); Smith & Brownell (1995). This condition of specific, but limited, information to subjects serves to reduce the chance of confound due to uncontrolled variability and actually serves to define the classification variables.

The critical reader may note absence of coefficient formulas for inter-rater, and test-retest, reliability. The former value may be high because of the relative ease in scoring the survey results. That is, each form produces one score, thus there is little chance of misinterpretation or confusion leading to errors recording data (Gay & Airasian's (2003). Test-retest reliability would provide little utility in this case because a subject would likely remember the answer chosen previously, again because only one score per survey was required.

Procedure: Sequential Method and Timelines

After receiving dissertation committee's approval of this research proposal, an IRB request for review exemption was sought (see Appendix). With these two approvals in place, a special education administrator in the Ohio Department of Education was contacted by mail and asked to review the Profile/Service Surveys developed the Hidden Cost treatment condition. While awaiting a response, a sample of 500 Ohio principals was sent a pre-survey postcard announcing a subsequent mailing of the research materials. The pre-survey postcard (see Appendix D) included a brief description of the study, assurance of anonymity, and expected time required for actual participation (e.g. five to ten minutes). There was no response from the special education administrator thus

no revisions to the Profile/Service survey were considered prior to the full-scale distribution of the instrument.

Subsequent to the pre-survey postcards, participants were mailed a three-page packet containing a one-page cover letter (see Appendix E) that expands information provided in the postcard, and two paired, one-page, Profile/Service surveys. Each principal was asked to review both student-profiles separately and choose the one service level option that would be most appropriate for each student. The principal was asked to then mail both student-service profiles to the researcher in a pre-stamped, self-addressed envelope. Upon receipt of subjects' responses, envelopes baring a postmark were destroyed.

After 21 days, tabulation determined there were not enough subject responses received. As noted, a 25 percent response rate would yield data from 125 respondents and represent 12.5 percent of the population. If there were no response bias attributable to the four treatment conditions, the 25 percent figure would provide approximately 31 responses per group. Since less than 30 responses per group were received, all subjects were sent a post-survey postcard (see Appendix D) as a reminder to respond, an offer to resend research materials, and a thank-you to respondents. After 30 more days, a second tabulation determined there were enough responses per group to proceed with statistical analysis.

All data received were reconfigured to form a useable database for an ANOVA experiment. Data was maintained in paper form and reviewed for consistency, and recording errors, prior to analysis. All data were anonymous thus no special precautions were necessary to protect subjects' identity. Subjects were informed they could access the

complete dissertation through Oklahoma State University library services when completed. No written comment on survey responses suggested a need for formal debriefing to assure subjects' wellbeing.

CHAPTER IV

RESULTS

This study investigated the hypotheses that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) and by Student Type (aggressiveness) by asking a sample of elementary school principals to choose services for students while being differentially sensitized to service costs. Five hundred principals were randomly chosen from a population of school principals, with each randomly assigned to one-of-four artificially created Fiscal Sensitivity conditions (n = 125). Potential subjects were mailed a survey packet specific to the sensitivity condition to which each was assigned, and asked to choose a service level score for each of two students depicted as either Aggressive or Non-Aggressive.

The respondents' service level scores were reconfigured as Expenditure values (dollars) to provide data for a mixed-factorial ANOVA, based on within subject, and between group comparisons. Each respondent contributed two Expenditure values, (i.e. one value for each Student Type), which necessitated a repeated-measure statistical design. The investigation utilized two independent variables: Student Type (ST) with two levels (Aggressive ST and Non-Aggressive ST) and Fiscal Sensitivity (FS) group with four levels (High FS, Moderate FS, Low FS and No FS). The dependent variable was

Expenditure, which again, were dollar values calculated according to the service level scores chosen.

After noting the number of Viable Responses, investigation results are presented as a review of Expenditure Hypothesis Tests, Service Level Choices, and Additional Findings: Demographics. In short, information gleaned from respondents' surveys did not support the primary research hypothesis that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) conditions. The secondary research hypothesis was demonstrated as special education Expenditures were influenced by Student Type (aggressiveness).

Viable Responses

Of the 500 principals surveyed, approximately 160 responses were received. Of these, 125 were considered viable. Surveys were not used if they were incomplete in any way. Surveys were not included in the final data set if the service level choice was ambiguous or somehow compromised by additional comments. For example, if a respondent had circled service level one and had handwritten the comment, "with a paraprofessional," the service level choice was considered unclear and therefore not used. This was a forced choice inventory and no qualifying judgments were made in such cases. Each of the 125 participants across the four Fiscal Sensitivity conditions contributed one response for each Student Type, for a total of 250 responses displayed in Table 4.1.

Table 4.1: Viable Responses by Student Type Across Fiscal Sensitivity Conditions

	High Sensitivity	Moderate Sensitivity	Low Sensitivity	No Sensitivity	Total Responses
Aggressive Student	30	31	28	36	125
Non-Aggressive Student	30	31	28	36	125
Total Responses	60	62	56	72	250

Expenditure Hypothesis Tests

As outlined in the Method section of this investigation, each respondent provided two Service Level scores that were subsequently converted to Expenditure values (dollars) according to Chambers and Wolman's (1998) special education cost estimates. The dependent variable of Expenditure was explored across all four Fiscal Sensitivity groups (between groups) and across both Student Types (within subjects) utilizing a mixed factorial 2 x 4 ANOVA design. Table 4.2 presents the descriptive statistics for this comparison.

Table 4.2: Descriptive Statistics for Student Type Across Fiscal Sensitivity Group

Fiscal Sensitivity Group		Mean	Standard Deviation	N
Aggressive Student	High	4,738.20	3,953.66	30
	Moderate	5,154.97	4,539.24	31
	Low	5,502.14	4,326.04	28
	No	4,909.67	5,010.07	36
	Total	5,062.06	4,458.54	125
Non-Aggressive Student	High	2,596.30	2,853.41	30
	Moderate	2,948.74	3,051.73	31
	Low	3,460.54	3,590.66	28
	No	2,870.44	4,306.86	36
	Total	2,956.25	3,505.88	125

Note: Means and standard deviations are dollar values rounded to the nearest cent.

Interaction Effect

The 2 x 4 ANOVA was conducted to test for an interaction effect given the independent variables of Student Type (with two levels) and Fiscal Sensitivity (with four levels), and, the dependent variable of Expenditure (dollars). See Table 4.3.

Table 4.3: 2 x 4 ANOVA Summary Table for Student Types Across Fiscal Sensitivity Groups

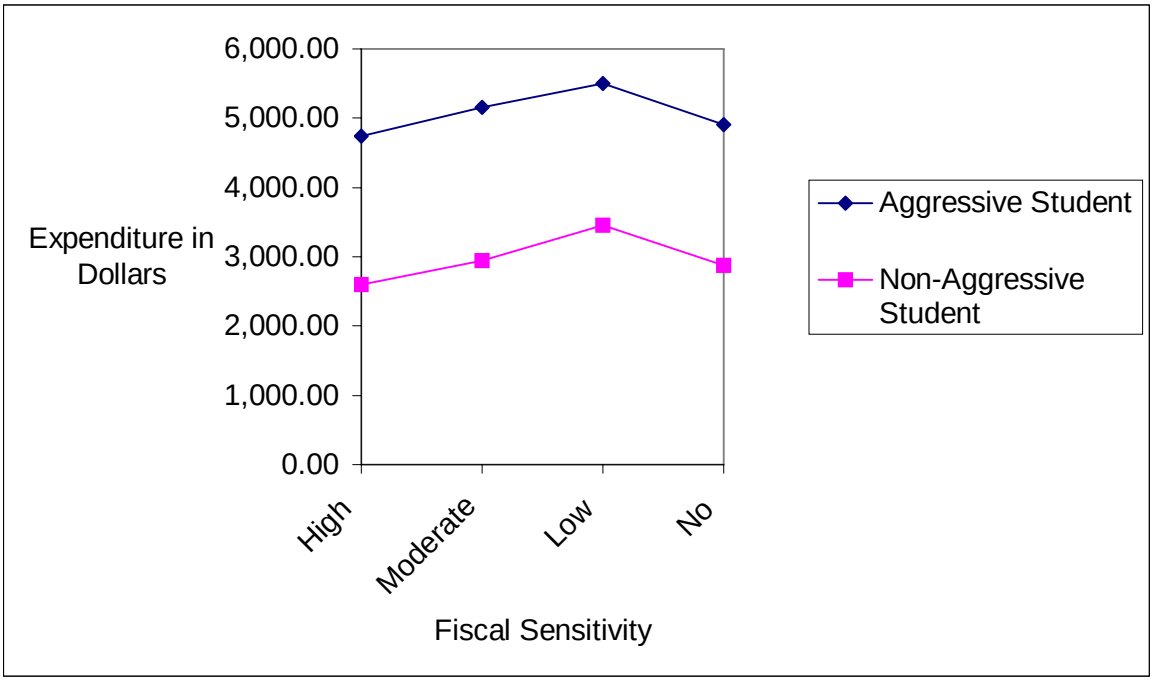
Tests of Within-Subject Contrasts					
Source	Sum of Squares	df	Mean Square	F	Significance
Student Type	275199024.5	1	275199024.5	55.787	0.000
Student Type * Fiscal Group	313347.874	3	104449.291	0.021	0.996
Error (Student Type)	596898491.5	121	4933045.384		
Tests of Between-Subject Effects					
Source	Sum of Squares	df	Mean Square	F	Significance
Fiscal Group	20633929.64	3	6877976.547	0.247	0.863
Error	3371209208	121	27861233.122		

Keppel (1991) recommends examining interaction effects in a two-factor test as a "logical first step" (p. 232). All critical values were tested at the alpha = 0.05 level of significance and Levene's test satisfied the assumption of homogeneity of variance. As noted in the ANOVA summary Table 4.9, there was no interaction effect of Student Types across Fiscal Sensitivity conditions on Expenditure, ($F = 0.021$ (3,121), p. = 0.996). The null hypothesis is accepted; in the general population, Expenditures would not be expected to vary differentially according to Student Type (aggressiveness) across Fiscal Sensitivity (financial pressure) conditions. A visual depiction of non-interaction between main effects is presented in Figure 4.1. Given there was no interaction effect, attention was turned to examination of marginal means for the presence of main effects.

Main Effects

Testing for the main effect of Fiscal Sensitivity involved the marginal means for the four Fiscal Sensitivity groups presented in Table 4.4. The marginal means ranged

Figure 4.1: Approximate Service Expenditure Means for Both the Aggressive and Non-Aggressive Student Across Sensitivity Conditions



from $3,667.25 (High FS group) to $4,481.34 (Low FS group). There exists a 95% surety that repeated sampling would produce means within the respective confidence intervals noted in Table 4.4. A comparison of marginal means across the Fiscal Sensitivity groups, without considering effects of Student Type, revealed there were no statistically significant differences, ($F = 0.247$ (3,121), $p. = 0.863$). The null hypothesis is accepted; principals in the general population would not be expected to spend money on special education services differentially according to varied financial pressures. The

primary research hypothesis, that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) was not realized.

Testing for the main effect of Student Type (ST) considered the marginal means of $5,076.24 (Aggressive ST) and $2,969.01 (Non-Aggressive ST) noted in Table 4.4.

Table 4.4: Service Expenditure Marginal Means and Confidence Intervals for Student Type Across Fiscal Sensitivity Group

			95% Confidence Interval	
		Estimated Marginal Mean	Lower Bound	Upper Bound
	Grand	4,022.63	3,358.92	4,686.33
Student Type	Aggressive	5,076.24	4,275.22	5,877.27
	Non-Aggressive	2,969.01	2,340.24	3,597.78
Fiscal Sensitivity Group	High Sensitivity	3,667.25	2,318.17	5,016.33
	Moderate Sensitivity	4,051.86	2,724.71	5,379.00
	Low Sensitivity	4,481.34	3,084.91	5,877.78
	No Sensitivity	3,890.06	2,658.52	5,121.60

Note: Means and confidence intervals are dollar values rounded to the nearest cent.

Again, there exists a 95% surety that repeated sampling would produce means within the respective confidence intervals. A comparison of the marginal means, without considering effects of Fiscal Sensitivity, revealed a significant Expenditure difference, ($F = 55.79$ (1,121), p. = 0.000). This finding was strong with Partial Eta Squared (Effect

Size) = 0.316. The null hypothesis is rejected; principals in the general population would be expected to spend money on special education services according to students' levels of aggression. The secondary research hypothesis, that special education Expenditures are influenced by Student Type (aggressiveness) was evidenced. Having investigated potential influences of Fiscal Sensitivity (financial pressure) and Student Type (aggressiveness) on Expenditure values (dollars), an exploration of the service level choices follows.

Service Level Choices

As noted, the primary and secondary hypotheses of this investigation were evaluated according to Expenditure values (dollars). Expenditure values were calculated according to Chambers and Wolman (1998) special education cost estimates applied to each respondent's service level choice (indicated as a score on each survey). Each of 125 respondents provided a single data set consisting of two paired service level scores; one score for each of two Student Types, for a total of 250 raw scores. Service level two emerged as the most frequent choice of sampled principals, for both Student Types, across all four Fiscal Sensitivity conditions. The frequencies of service level two choices by sampled principals were explored as proportions across three different configurations of pooled scores; 1) overall, 2) across Student Types with Fiscal Sensitivity groups combined, and, 3) across Fiscal Sensitivity groups with Student Types combined. Service level choices across all seven service levels, both Student Types and all four Fiscal Sensitivity groups are presented in Table 4.5. To explore the high frequency of the service level two choices overall, raw scores across all seven service levels were

configured as proportions in Table 4.6 with Student Types and Fiscal Sensitivity groups combined. The approximate percentages ranged from 1% (service level 7) to 49% (service level 2). A Chi-Square analysis with expected frequencies based on equal service level choice rates across all seven service level options was performed. Differences in service level choices across all service level options were found to be statistically significant at alpha = 0.05; ($X^2 = 299.76 > 12.592$, df = 6). The null hypothesis is rejected; service level choices would be expected to vary in the general population.

Table 4.5: Raw Score Frequencies Across All Seven Service Level Choices, Both Student Types and All Four Fiscal Sensitivity Groups

		High Sensitivity	Moderate Sensitivity	Low Sensitivity	No Sensitivity
Level 1	Aggressive Student	2	1	0	3
	Non-Aggressive Student	2	2	1	4
Level 2	Aggressive Student	11	11	11	16
	Non-Aggressive Student	18	17	16	23
Level 3	Aggressive Student	6	9	5	2
	Non-Aggressive Student	7	8	4	2
Level 4	Aggressive Student	4	1	0	1
	Non-Aggressive Student	1	0	1	0
Level 5	Aggressive Student	6	7	9	11
	Non-Aggressive Student	2	4	6	6
Level 6	Aggressive Student	1	1	3	2
	Non-Aggressive Student	0	0	0	0
Level 7	Aggressive Student	0	1	0	1
	Non-Aggressive Student	0	0	0	1

Note: Service Level Two (bolded) was chosen most frequently by sampled principals.

Table 4.6: Proportions of Service Levels Chosen Overall Expressed in Approximate Percentages (Student Types and Fiscal Sensitivity Groups Combined)

Service Level 1	15/250 = 0.06	6%
Service Level 2	123/250 = 0.492	49%
Service Level 3	43/250 = 0.172	17%
Service Level 4	8/250 = 0.032	3%
Service Level 5	51/250 = 0.204	20%
Service Level 6	7/250 = 0.028	3%
Service Level 7	3/250 = 0.012	1%

Further exploration of the service level two choices by sampled principals was conducted across both Student Types with Fiscal Sensitivity groups combined. Table 4.7 displays proportions created by reconfiguring the raw data for service level two only, pooled according to respective Student Types. The approximate percentage of service level two chosen by respondents for the Aggressive Student was 39.2% and for the Non-Aggressive Student was 59.2%. A Chi-Square analysis with expected frequencies based on equal service level two rates across both Student Types were performed. The

Table 4.7: Approximate Service Level Two Percentages of All Service Level Choices Across Both Student Types

Aggressive Student	Non-Aggressive Student
125 total scores	125 total scores
49 Level Two scores	74 Level Two scores
49 of 125 = 39.2%	74 of 125 = 59.2%

difference in the percentage of service level two choices by sampled principals was found to be statistically significant (at alpha = 0.05) across Student Types ($X^2 = 5.08 > 3.841$, df

=1). The null hypothesis is rejected; given similar choices, the general population of principals would be expected to choose service level two more frequently for non-aggressive students than for aggressive students.

The service level two choice of sampled principals was considered across all four Fiscal Sensitivity groups with both Student Types combined. The raw score frequencies for the service level two choice is converted to percentages of all service level scores in Table 4.8. The percentages of service level two chosen by respondents in each Fiscal

Table 4.8: Approximate Percentages of Service Level Two Choices Across All Four Fiscal Sensitivity Groups

High Sensitivity	Moderate Sensitivity	Low Sensitivity	No Sensitivity
60 total scores	62 total scores	56 total scores	72 total scores
29 Level Two scores	28 Level Two scores	27 Level Two scores	39 Level Two scores
29 of 60 = 48.33%	28 of 60 = 45.16%	27 of 56 = 48.21%	39 of 72 = 54.17%

Sensitivity group ranged from 45.16% (Moderate Sensitivity group) to 54.17% (No Sensitivity group). A Chi-Square analysis with expected frequencies based on equal service level two rates across all four Fiscal Sensitivity groups was performed. Differences in the percentage of service level two choices by sampled principals were not found to be statistically significant (at alpha = 0.05) across the four Fiscal Sensitivity groups ($X^2 = 3.02 < 7.815$, df = 3). The null hypothesis is accepted; given similar service level choices, the general population of principals who would choose service level two would do so equally regardless of Fiscal Sensitivity conditions.

Additional Findings: Demographics

Only minimal demographic information was requested from respondents so as to maintain the perception of anonymity and simplicity in the actual response procedure. Data requested was School Location by indication of Rural, Suburban or Urban, and, School Size by indication of the number of regular education students and the number of special education students. The sampled schools, represented by their respective principals, were not stratified across demographic variables. For this reason, results of statistical tests in this section should be interpreted with caution.

Response Rates

Response rates across school locations were considered to determine if urbanity affected a sampled principal's likelihood of responding to the survey. Table 4.9 shows survey response rates across the three different school locations ranged from 31% to 37%. A Chi-Square analysis with expected frequencies based on equal groups was performed. Differences in response rates were not found to be statistically significant at alpha = 0.05; ($X^2 = 0.69 < 5.991$, df = 2). The null hypothesis is accepted; the response rates from different locations would be expected to be approximately equal if the general population were asked to respond to this survey.

Table 4.9: Response Rates as Approximate Percentages Across School Locations

Rural Location	Suburban Location	Urban Location
n = 46 Schools	n = 40 Schools	n = 39 Schools
46 of 125 = 37%	40 of 125 = 32%	39 of 125 = 31%

Response rates across school sizes were considered to determine if the number of students in a school influenced a sampled principal's likelihood of responding to the survey. A school's size was calculated by combining the number of regular education students and special education students indicated by each respondent. The schools where assigned to one of four school size categories developed with a 0.25 multiplier (quartiles) applied to the second largest school population. The largest school was not included in the quartile development because it was nearly 75% larger than the next largest school. This school was included in all other data configurations. Table 4.10 presents response rates as approximate percentages across all four school size categories. Response rates

Table 4.10: Response Rates as Approximate Percentages Across School Sizes

Small Schools	Moderate Schools	Large Schools	Largest
n = 13 Schools	n = 70 Schools	n = 32 Schools	n = 10 Schools
13 of 125 = 10%	70 of 125 = 56%	32 of 125 = 26%	10 of 125 = 8%

across school sizes ranged from 8% to 56%. A Chi-Square analysis with expected frequencies based on equal response rates across schools grouped by size was performed. Differences in response rates were statistically significant (at alpha = 0.05) across school

size groups ($X^2 = 73.18 > 7.815$, df = 3). The null hypothesis is rejected; survey response rates would be expected to vary according to school size in the general population.

Information from survey respondents allowed two additional avenues of investigation utilizing school location and school size as independent variables. Tests were performed to determine if a school's location (rural, suburban or urban) was related to 1) special education identification rates, and, 2) special education Expenditure means. Similarly, tests were performed to determine if a school's size (small, moderate, large or largest) was related to 1) special education identification rates, and, 2) special education Expenditure means.

School Location

Table 4.11 indicates special education identification rates across the three different school locations ranged from 8.57% to 10.96%. A Chi-Square analysis

Table 4.11: Special Education Identification Rates Across School Locations (Approximate Percentage of Special Education Students in Sampled Schools)

Rural Location	Suburban Location	Urban Location
8.57%	9.46%	10.96%

with expected frequencies based on equal groups shows differences in identification rates are statistically significant at alpha = 0.05; ($X^2 = 46.64 > 5.991$, df = 2). The null hypothesis is rejected; special education identification rates would be expected to vary in the general population according to school location.

Expenditure means across school locations in Table 4.12 ranged from $3,502.39 to $4,579.33. These means are calculated from raw data representing both Student Types and all four Fiscal Sensitivity groups pooled. A one-way ANOVA did not reveal a

Table 4.12: Service Expenditure Means Across School Locations

Rural Location	Suburban Location	Urban Location
Mean = $4,579.33	Mean = $3,502.39	Mean = $3856.41

statistically significant difference (at alpha = 0.05) between the three means, (F = 1.532, (2, 247), p. = 0.218). The Levene statistic assured the Homogeneity of Variance assumption was satisfied. The null hypothesis is accepted; there would be no difference between mean service expenditures according to school location expected in the general population.

School Size

Special education identification rates ranged from 8.39% to 9.97% across school size quartiles and are presented in Table 4.13. A Chi-Square analysis with expected

Table 4.13: Special Education Identification Rates across School Sizes (Approximate Percentage of Special Education Students in Sampled Schools)

Small Schools	Moderate Schools	Large Schools	Largest Schools
8.39%	9.97%	9.31%	9.65%

frequencies based on equal groups shows differences in identification rates are statistically significant at alpha = 0.05; (X^2 = 2,277.63 > 7.815, df = 3). The null hypothesis is rejected; Special education identification rates would be expected to vary in the general population according to school size. Expenditure means ranged from $3,680.45 to $5, 860.12 across school size categories (see Table 4.14). Again, means are calculated from raw data representing both Student Types and all four Fiscal Sensitivity groups pooled. A one-way ANOVA did not reveal a statistically significant difference (at alpha = 0.05) between the four means, (F = 2.499, (3, 246), p. = 0.060). The Levene

Table 4.14: Service Expenditure Means Across School Sizes

Small Schools	Moderate Schools	Large Schools	Largest Schools
Mean = $5,860.12	Mean = $4,049.01	Mean = $3,272.73	Mean = $3,680.45

statistic assured the Homogeneity of Variance assumption was satisfied. The null hypothesis is accepted; there would be no difference between mean service expenditures according to school size expected in the general population.

Conclusions

An investigation of the effects of Fiscal Sensitivity on school principals' Expenditures for special education services was performed. The primary hypothesis that special education Expenditures are influenced by Fiscal Sensitivity was not realized. The secondary hypothesis that special education Expenditures are influenced by Student Type was demonstrated. Thirdly, Expenditures did not vary differentially according to Fiscal

Sensitivity and Student Type. These results may be considered conclusive given the parameters and constructs utilized to explore these questions.

The service level options (scores 1-7) utilized to develop the Expenditure values (dollars) were explored. Under similar circumstances, service level choices would be expected to vary in the general population, though service level two would be chosen 49% of the time. In the general population Fiscal Sensitivity would not be expected to influence the frequency of the service level two choices. Conversely, in the general population Student Type would be expected to influence the frequency of the service level two choices.

Additional findings were interpreted with caution as school locations and school sizes were not stratified in the sampling procedure. Survey response rates were noted to be approximately equal across school locations, but were varied according to school size. Special education identification rates were found to vary across school locations and across school sizes. Special education Expenditure values did not vary according to school location or school size.

CHAPTER V

DISCUSSION

This study explores hypotheses that special education Expenditures are influenced by Fiscal Sensitivity (financial pressure) and by Student Type (aggressiveness). Although this question has been studied in many different ways, it remains central to policy makers and stakeholders. A recent edition of the Journal of Special Education Leadership (JSEL) entitled, *Special Issue: Special Education Funding* (Boscardin, 2005a) provides a backdrop to the pertinence of this current investigation. In the special issue, Mahitivanichcha and Parrish (2005) note budgetary concerns greatly impact policy and practice of resource allocation for special education service provision. In a discussion of the interplay of financial burden(s) on the evolution of special education programming, Boscardin (2005b) states that concerns about financing services for students with disabilities will remain a prominent issue under IDEA 2004. The difficulty in reaching conclusive understandings of these questions is exemplified by Mahitivanichcha and Parrish's (2005) retort to an earlier study by Greene and Forster (2002) on the effects of funding systems on special education identification rates. Disputing otherwise firm conclusions reached by Greene and Forster on specific (i.e. incentive-free) funding systems, Mahitivanichcha and Parrish (2005) maintain that that incentive-free approaches to special education resource allocation and funding do not exist. Inevitably, all

composite strategies include some fiscal premiums based on perceived student need in relation to budgetary concerns. As with the ongoing debate noted above, the current exploration of financial pressures on special education expenditures may not be considered wholly conclusive.

Special Education Expenditures

Limitations

The primary hypothesis that Fiscal Sensitivity (fiscal pressure) would affect Expenditures on special education services was not realized according to the methodology of the investigation and the statistical analysis used to test the results. This non-significant statistical result could be because a) no real differences in mean expenditures would exist if the population were presented with similar conditions, b) the sample did not reveal real differences that would exist if the population were presented with similar conditions, or, c) the theoretical constructs employed in the methodology did not capture real life conditions in the sample and the subsequent population. This writer posits the last presumption as the most likely.

Mean Differences

The result of non-significant differences in marginal means should be interpreted with caution. The theoretical constructs used to develop the service categories and respective expenditure estimates contributed to variability of scores about the mean within each Fiscal Sensitivity group. The service levels and corresponding cost estimates

were based on prior research with the goal of reflecting real world conditions. Although prior research provided a practical set of service choices for the principals and tangible dollar values to calculate expenditures, the natural interval structure may have introduced excessive variability to this investigation. Table 5.1 contains the service level score options (sans descriptors) principals chose from and the corresponding estimated costs later used to calculate Expenditures (dependent variable). It is possible that unequal, in fact grossly disproportionate, intervals produced a theoretical confound rendering the statistical results inconclusive. Given the saliency of this argument, one would ask what could be deduced from these findings.

Table 5.1: Values Used to Calculate Expenditures According to Service Level Option

Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
$0.00	$835.00	$5,140.00	$8,831.00	$9,024.00	$12,653.00	$19,707.00

Future Research On Special Education Expenditure

The marginal means, though not statistically significant, suggests a more sensitive methodology may be employed to explore the primary hypothesis that Fiscal Sensitivity (financial pressures) would affect Expenditure on special education students. Keppel (1991) discusses analysis of trend as an exploration of systematic relationships between independent and dependent variables, with no interest in "testing differences between adjacent means" (p.142). That is, statistically significant differences between means may be a supportive rather than conclusive finding. A future investigation might be designed to test for an overall linear trend (p. 146). Keppel notes three concerns in planning a trend

analysis. First, one would want "to know the general shape of the function ahead of time" (p. 154) to help plan the spacing, and number, of intervals. Marginal means in this current study suggest a linear function would emerge in a full-fledged trend analysis based on similar constructs. Second, the spacing of intervals should a) include extremes, that is, the full range of expenditures a principal might expect to see, and b) equal spacing with fiscal sensitivity conditions developed according to a multiplier. Third, the number of intervals should allow for a reasonable opportunity of detecting higher-order trends that might otherwise be missed. For example, Keppel suggests five to seven intervals in the case of an expected linear trend (p. 155). The Ohio data used to develop the methodology for this dissertation would be easily adapted to the further research proposed here.

Expenditures for Aggressive Students

The secondary hypothesis that Student Type (aggressiveness) would affect Expenditure was realized. This research question was incorporated to look at differential effects of Student Type on the primary hypothesis concerned with effects of Fiscal Sensitivity (financial pressure) on Expenditure. This investigator suspected that some students may be more, or less, vulnerable to fiscally influenced service provision resource allocation. The constructs of aggressive verses non-aggressive student behavior allowed a very distinct classification variable in this regard. That is, a variable that was easily described, clearly delineated and one that would capture the subject's attention.

Most literature comparing differences in spending according to student types does so categorically (e.g. Emotionally Disturbed vs. Learning Disabled) without delineation according to more specific student characteristics (see Chambers, Shkolnik & Perez

2003). Expenditure studies that do consider students' characteristics are generally concerned with demographic qualities (see Chambers, Kidron & Spain, 2004). While behavior problems are often a concern in special education programming, aggression verses non-aggression was not a focus of this current investigation, per se. No interaction effect occurred, thus discussion is limited to implications of expenditures on aggressive and non-aggressive students as sub-populations of students with disabilities.

The secondary hypothesis findings do support two avenues of further study. In the same vein as this current investigation, aggression verses non-aggression as classification variables could be retained in the proposed trend analysis model for future research on the primary hypothesis that Fiscal Sensitivity (financial pressure) affects Expenditure. Simply stated, the research question would consider if trends in expenditures would be similar for aggressive students verses non-aggressive students. As an independent variable depicted within a qualitative narrative, the construct of aggression is clearly identified by readers, and conversely, presents a subtle distraction from Fiscal Sensitivity as a study's primary concern (i.e. treatment conditions). The second area of exploration, well beyond the scope of this current writing, would be the implications of educating aggressive students in general.

Extensive controversy exists on whether aggression in special education students should, or should not, be accommodated as part of programming considerations. Historically, challenging behaviors related to Attention Deficit Hyperactivity Disorder (ADHD, or ADD), Oppositional Defiant Disorder (ODD) and even Conduct Disorder have been hotly debated in the literature by several authors. (Reader may consider extensive writings on the Social Maladjustment Exclusionary Clause). Although still

queried by student advocates, school administrators and legal counsel, IEP Team members must make service provision decisions every day. Pertinent decisions are often along the lines of programming to decrease aggression (e.g. behavior change and behavioral management approaches) and/or programming that allows education to proceed despite aggressive behaviors. Although all stakeholders are primarily concerned with best practice allowing students to benefit from educational opportunities, the bottom line is often resource allocation. In these regards, the underlying questions for service provision decision makers who have to balance a budget relate to how much money is spent to educate students who have aggressive behavior.

Sampled principals in this current study clearly considered aggression to be a facet of student disability or at least, a condition to be accommodated in educational programming. These principals were willing to spend more money to educate students with aggression than on those who were not aggressive. This clear delineation is segue to future study to determine why principals would be willing to spend more on educational programming for aggressive students. For example, research could look at perceptions of aggressive students as an expensive, unpleasant burden, or conversely, as damaged individuals needing additional support and guidance. Given the interplay between aggression and expenditure demonstrated in this current study, future research is warranted.

Ohio Data

This current study was based on research by the Center for Special Education Finance (CSEF), which was established in 1992 as a federally funded project managed by

a private, independent research company; American Institutes for Research (AIR). This funding ended in 2004 according to CSEF Director Dr. Tom Parrish, although CSEF remains active contracting with individual states for research on special education finance concerns (personal communication, December 12, 2006). This current study was in no way sanctioned, nor even reviewed, by CSEF/AIR personnel, but appropriate credit for their work requires more than a brief text citation. This current study made extensive use of qualitative data (narrative service descriptions) and corresponding quantitative data (expenditure estimates for respective services) from *What can we learn from state data systems about the cost of special education? A case study of Ohio* (Chambers & Wolman, 1998). This data was integral to the instrument development (service choice surveys), creating artificial conditions of Fiscal Sensitivity (treatment conditions) and for calculating Expenditures according to the service provision choices made by subjects. Finally, this current study (developed according to Ohio-based data constructs), utilized a sample of Ohio elementary school principals.

Expenditure: Additional Findings

Cautious Interpretation

The sampling procedure, outlined in the Method chapter of this current study, produced results that can be considered representative of the general population as far as the primary and secondary hypotheses are concerned. All findings relating to School Locations and School Size should be interpreted with much caution since the sample was not stratified in these regards. In fact, Chambers and Wolman's (1998) study is founded,

in part, on unraveling the methodological intricacies of special education service expenditures according to disaggregated data. There was little opportunity to triangulate results from the current study with that of Chambers and Wolman's, or other studies, because of variations in how data is compiled.

School Location

This current investigation found no significant difference in mean expenditures across Ohio schools identified as Rural, Suburban and Urban. A 2002 report by Chambers, et al. noted, "In real terms rural *districts* [nationally] are spending about 9% more ...than their urban counterparts to provide education services to students with disabilities" (p. 4-5, italics and brackets added). In this case, actual mean expenditure dollar amounts were not comparable. This current study found school location did affect special education identification rates. It is reasonable to believe varied numbers of special education students in this regard would affect potential expenditures per student. Given disparity of findings according to school locations, Urbanicity would be a concern in future expenditure studies.

School Size

Chambers, et al. (2002) found "All but the smallest *districts* [nationally] (with fewer than 2,500 students) spend similar amounts to educate a student with a disability;" (p. 5, italics and brackets added) These results may be similar to this current research which found no significant differences on mean expenditures for special education across *schools* according to size. This may not be a legitimate comparison as district size may

not correspond with school size. This current study did find differences in identification rates according to school sizes, which in turn, may have differentially affected expenditure per student. Therefore, school size remains a concern when studying expenditures.

Conclusions

The most important finding of this current research was a need, and clear direction, for future studies on how financial pressures affect special education service provision expenditures. Understanding these intricacies will greatly benefit efforts to improve programming leading to favorable educational outcomes. Chambers, Parrish, Lieberman and Wolman (1998) note that historically, special education financial concerns have been difficult to study because aggregated data is often of poor quality, antiquated and sometimes does not exist. Chambers, et al. (2005) authors stated, "Despite considerable recent interest in special education spending, accurate data for the nation and many states often have not been readily available or current" (p. 5). Further, Verstegen (1998) writes that special education funding structures in several states have been found "unconstitutional", and that "Inequitable funding led to differences in the quality and equality of programs and services for children..." (p. 3). Parrish, Esra and Wolman (2005) emphasize, the "question of whether local decision makers (sic) in any way respond to fiscal incentives their state special education funding formulas may contain" (p. 4), as being key. The current research generated reliable data subsequently used to explore interplay between financial pressures and service expenditures. Some results may be inconclusive, some may be interpreted with caution and some demonstrate

clear relationships. This study may be considered a preliminary step towards educational equity for students who have unique needs as well as unique potentials.

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Appendix A

Profile/Service Surveys

Appendix A provides an overview of the Profile/Service Survey forms followed by the eight actual Profile/Service Survey forms. Note that running header, pagination and Profile/Service Survey codes provided in Appendix are masked on versions provided to subjects.

Table A.1: The Eight Profile/Service Survey Codes

Student Type (ST)	Fiscal Sensitivity (FS)			
	High FS	Moderate FS	Low FS	No FS
Aggressive	AH	AM	AL	AN
Non-Aggressive	NH	NM	NL	NN

Special Education Student Service Profile (AH)
Aggressive ST/High FS

Special Education Student Service Profile (AM)
Aggressive ST/Moderate FS

Special Education Student Service Profile (AL)
Aggressive ST/Low FS

Special Education Student Service Profile (AN)
Aggressive ST/No FS

Special Education Student Service Profile (NH)
Non-Aggressive ST/High FS

Special Education Student Service Profile (NM)
Non-Aggressive ST/Moderate FS

Special Education Student Service Profile (NL)
Non-Aggressive ST/Low FS

Special Education Student Service Profile (NN)
Non-Aggressive ST/No FS

Profile/Service Survey (AH)

The student (fictitiously named Mark) is a ten-year-old male who currently attends regular education classes with no special education services. Mark is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Mark is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher.* After the third suspension, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Mark's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Mark to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$1,253.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$7,710.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$13,247.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$13,536.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$18,980.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$29,561.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location. Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (AM)

The student (fictitiously named Mark) is a ten-year-old male who currently attends regular education classes with no special education services. Mark is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Mark is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher.* After the third suspension, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Mark's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Mark to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$835.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$5,140.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$8,831.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$9,024.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$12,653.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$19,707.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location. Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (AL)

The student (fictitiously named Mark) is a ten-year-old male who currently attends regular education classes with no special education services. Mark is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Mark is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher.* After the third suspension, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Mark's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Mark to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$418.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$2,570.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$4,416.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$4,512.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$6,327.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$9,854.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location. Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (AN)

The student (fictitiously named Mark) is a ten-year-old male who currently attends regular education classes with no special education services. Mark is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Mark is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher.* After the third suspension, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Mark's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Mark to benefit from his educational opportunities.

1	Regular Education self-contained class and general music
2	Regular Education self-contained class, resource room and general music
3	Special Class 60 % and regular self-contained class 40%, general music
4	Special Class 100%, except for general music
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music
6	Special Needs School: Full-time special class and supplemental professional services
7	Special Needs School: Full-time special class, supplemental professional services and related services

Please circle either: Urban, Suburban or Rural, to indicate your school's location. Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (NH)

The student (fictitiously named Eric) is a ten-year-old male who currently attends regular education classes with no special education services. Eric is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Eric is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums.* After the third visit to the principal, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Eric's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Eric to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$1,253.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$7,710.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$13,247.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$13,536.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$18,980.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$29,561.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location.

Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (NM)

The student (fictitiously named Eric) is a ten-year-old male who currently attends regular education classes with no special education services. Eric is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Eric is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums.* After the third visit to the principal, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Eric's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Eric to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$835.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$5,140.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$8,831.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$9,024.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$12,653.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$19,707.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location.

Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (NL)

The student (fictitiously named Eric) is a ten-year-old male who currently attends regular education classes with no special education services. Eric is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Eric is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums.* After the third visit to the principal, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Eric's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Eric to benefit from his educational opportunities.

1	Regular Education self-contained class and general music Additional cost to district including transportation:	$0.00
2	Regular Education self-contained class, resource room and general music Additional cost to district including transportation:	$418.00
3	Special Class 60 % and regular self-contained class 40%, general music Additional cost to district including transportation:	$2,570.00
4	Special Class 100%, except for general music Additional cost to district including transportation:	$4,416.00
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music Additional cost to district including transportation:	$4,512.00
6	Special Needs School: Full-time special class and supplemental professional services Additional cost to district including transportation:	$6,327.00
7	Special Needs School: Full-time special class, supplemental professional services and related services Additional cost to district including transportation:	$9,854.00

Please circle either: Urban, Suburban or Rural, to indicate your school's location.

Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Profile/Service Survey (NN)

The student (fictitiously named Eric) is a ten-year-old male who currently attends regular education classes with no special education services. Eric is on medications and receives outpatient therapy to help control depression symptoms and tantrums.

Eric is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums.* After the third visit to the principal, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Eric's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Please review the seven service options and <u>circle only one option number (1-7)</u> that would most likely reflect appropriate accommodations and allow Eric to benefit from his educational opportunities.

1	Regular Education self-contained class and general music
2	Regular Education self-contained class, resource room and general music
3	Special Class 60 % and regular self-contained class 40%, general music
4	Special Class 100%, except for general music
5	Special Class 60% and supplemental professional services, regular self-contained class 40%, general music
6	Special Needs School: Full-time special class and supplemental professional services
7	Special Needs School: Full-time special class, supplemental professional services and related services

Please circle either: Urban, Suburban or Rural, to indicate your school's location.

Please indicate the total number of students in your school and how many of those students receive special education. Total_____ Special Education_____

Appendix B

Profile Vignettes

Profile Vignettes delineate the two levels of the classification variable, Student Type (ST).

Table B.1: Profile Vignette for *Aggressive* Student Type

The student (fictitiously named Mark) is a ten-year-old male who currently attends regular education classes with no special education services. Mark is on medications and receives outpatient therapy to help control depression symptoms and tantrums. Mark is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Mark has been suspended 3 times during the last year for refusing to follow classroom rules, generally disruptive behavior, being aggressive towards property, other students and a teacher.* After the third suspension, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Mark's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Table B.2: Profile Vignette for *Non-Aggressive* Student Type

The student (fictitiously named Eric) is a ten-year-old male who currently attends regular education classes with no special education services. Eric is on medications and receives outpatient therapy to help control depression symptoms and tantrums. Eric is in fourth grade, has attended the same school for the last 2 years and has achieved mostly B's and C's. Of late, his grades have been declining and he is at-risk for failing several classes. Additionally, *Eric has been sent to the principal's office 3 times during the last year for disrupting the classroom with crying and screaming tantrums.* After the third visit to the principal, pre-referral interventions including preferential seating, extra time during tests and sessions with the school's counselor were initiated. Behavior and academic problems continued and the student was eventually referred to the school psychologist to determine if he has a disability that affects his school performance. A standard battery of testing revealed an average to high average full-scale IQ. Eric's academic achievement was found to be two grade levels below his actual grade level in math and reading, and one grade level below for all other subjects.

Appendix C

Expenditure Estimates and Expenditure Range Calculations

Tables present the progression of calculations for developing Expenditure estimates used to create faux Fiscal Sensitivity treatment conditions (Independent Variable), and, for determining Expenditures (Dependent Variable) based on Service Level Choices. All Expenditure Estimate calculations are based on Chambers and Wolman's (1998) research on Ohio service provision descriptions (Service Level Options) and associated costs.

Table C.1: Actual and Additional Expenditure Estimates across Service Level Options

	Service Level Expenditure Estimates (In Dollars)						
Cost	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7
Actual Cost to District	6,044	6,879	11,184	14,875	15,068	18,697	25,751
Additional Cost to District	0.00	835	5,140	8,831	9,024	12,653	19,707

Notes: Option 1 represents the estimated total cost to educate a student *without* any type of special education services.
Options 2-7 represent the estimated total costs to educate a student *across a variety* of special education services.
Additional cost to district is calculated by subtracting Option 1 Cost, (i.e. actual cost to district without special services), from each Option Cost, 1-7.
All *Actual and Additional* cost to district estimates include transportation.

Table C.2: Graduated Additional Cost to District Calculations across Service Level Options According to Fiscal Sensitivity (FS) Treatment Condition

	Graduated Service Level Expenditure Estimates (In Dollars)						
Treatment Condition	Option 1 (0.00)	Option 2 (835)	Option 3 (5,140)	Option 4 (8,831)	Option 5 (9,024)	Option 6 (12,653)	Option 7 (19,707)
No FS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Low FS	(0.00)	418	2,570	4,416	4,512	6,327	9,854
Moderate FS	(0.00)	835	5,140	8,831	9,024	12,653	19,707
High FS	(0.00)	1,253	7,710	13,247	13,536	18,980	29,561

Notes: Options 1-7 are initially presented with corresponding *Additional* Cost to District (parenthetical) for special services including transportation.
No FS condition created by omitting cost estimates from Profile/Service surveys.
Low FS condition created by applying 0.5 multiplier to Additional Cost to District Value across all Service Level options (1-7).
Moderate FS condition created by applying 1.0 multiplier to Additional Cost to District value across all Service Level options (1-7).
High FS condition created by applying 1.5 multiplier to Additional Cost to District value across all Service Level options (1-7).

Appendix D

Pre-Survey and Post-Survey Postcards

Table D.1: Text View of Pre-Survey Postcard

Date:
Ms. Doe,

Please be in receipt of survey materials to follow this pre-survey announcement. Surveys will provide data for an Oklahoma State University dissertation level study of special education service decisions. Your participation is voluntary, 100% anonymous and should take less than 10 minutes of your time.

Thank you in advance.
Lew Davis, MHR, PhD Candidate

Table D.2: Text View of Post-Survey Postcard

Date:
Ms. Doe,

This postcard is in regard to the survey materials mailed you on [Date]. If you *have* responded, thank you for your participation! If you have not responded, please do so as your participation contributes to the special education knowledge-base that benefits all students. If you need duplicate survey materials, feel free to contact me at the return address on this postcard.

Thank you in advance.
Lew Davis, MHR, PhD Candidate

Appendix E

Cover Letter

Date:

Ms. Jane Doe
Principal
Elementary School Name
Elementary School Address

Enclosed: Two, one-page, Profile/Service Surveys
One addressed, stamped return envelope.

Dear Ms. Doe,

This communication serves as follow-up to a postcard announcing a study on special education service-provision practices. Your consent to participate in this dissertation investigating relationships between fiscal contingency and perceptions of student need is indicated by your completion and return of the two enclosed surveys. Your participation is voluntary, anonymous and confidential.

Please find two enclosed *Profile/Service Survey* documents for your consideration. Your participation should take less than ten minutes, but please be sure to read each *Profile/Service Survey* carefully. The surveys are very similar except for the behavior characteristics of the two students noted in boldface italics. The student profiles and service options are concise to isolate variables, and are not meant to attend to all the factors an IEP team would be concerned with.

1) Please read one Profile/Service Survey and identify the service option (1-7) that will best meet the student's needs by circling *only one number.*

2) Please read the second Profile/Service Survey and identify the service option (1-7) that will best meet the student's needs by circling *only one number.*

3) Please answer the two demographic questions at the bottom of *either* survey page.

Please find time to complete the two Profile/Service Surveys and mail them in the addressed, stamped envelope as soon as possible. Survey results will be available to participants and non-participants at: http://home.okstate.edu/homepages.nsf/toc/LEWssurvey

Thank you in advance for your participation,

Lew Davis, MHR, PhD Candidate
Oklahoma State University

Appendix F

Oklahoma State University Institutional Review Board

Date:	Friday, April 08, 2005
IRB Application No	ED05100
Proposal Title:	Effects of Fiscal Sensitivity on Special Education Decision-Making
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/7/2006

Principal Investigator(s)

Lewis William Davis
1653 E. 61st St.
Tulsa, OK 74136

Kay Bull
419 Willard
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

VITA

Lewis William Davis

Candidate for the Degree of

Doctor of Philosophy

Dissertation: EFFECTS OF FINANCIAL PRESSURES ON SPECIAL EDUCATION SPENDING: HOW FISCAL SENSITIVITY INFLUENCES SERVICE EXPENDITURE

Major Field: Educational Psychology

Biographical:

Education: Graduated from Elmira Free Academy, Elmira New York, in May, 1979; received a Bachelor of Science degree in Psychology from Elmira College, Elmira New York in May, 1983; received a Master of Human Relations degree from University of Oklahoma, Norman Oklahoma, in May, 1997; currently enrolled in graduate level substance abuse coursework at University of North Carolina, Charlotte, North Carolina. Completed the requirements for the Doctor of Philosophy degree with a major in Educational Psychology in July, 2007.

Experience: Employed in varied behavioral health positions for 25 years serving mentally and emotionally disturbed clients in all age ranges; Tulsa Public Schools special education teacher for two years, Tulsa, Oklahoma; Tulsa Community College adjunct instructor for five years, Tulsa, Oklahoma. Currently employed at Stanly Regional Medical Center in Albemarle, North Carolina as a therapist in a locked psychiatric facility.

Professional Membership: Licensed Professional Counselor in North Carolina.

Name: Lewis William Davis Date of Degree: July, 2007

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: EFFECTS OF FINANCIAL PRESSURES ON SPECIAL EDUCATION SPENDING: HOW FISCAL SENSITIVITY INFLUENCES SERVICE EXPENDITURE

Pages in Study: 105 Candidate for the Degree of Doctor of Philosophy

Major Field: Educational Psychology

Scope and Method of Study: The purpose of this study was to examine the relationship between financial pressure and resource allocation among administrators choosing services for special education students. Participants were 125 school principals in four artificially created fiscal sensitivity groups who responded to a survey. Each principal chose services for two hypothetical special education students depicted as either aggressive or non-aggressive. Dollar values were calculated according to services chosen for each student and average expenditures were compared across all four fiscal sensitivity groups, and both student types, utilizing a 2 x 4 ANOVA.

Findings and Conclusions: The primary hypothesis that fiscal sensitivity (financial pressure) would affect expenditures was not realized. No statistically significant relationship existed between the mean expenditure values across the four groups of principals exposed to varied financial pressures. The secondary hypothesis that student type (aggressive vs. non-aggressive) affects expenditure was realized. Mean expenditures by principals were statistically different for the two student types. Future research may use a more sensitive methodology and statistical analysis to study hypothesized effects of financial pressures during the special education service-provision decision-making process.

Advisor's Approval: Dr. Kay Bull